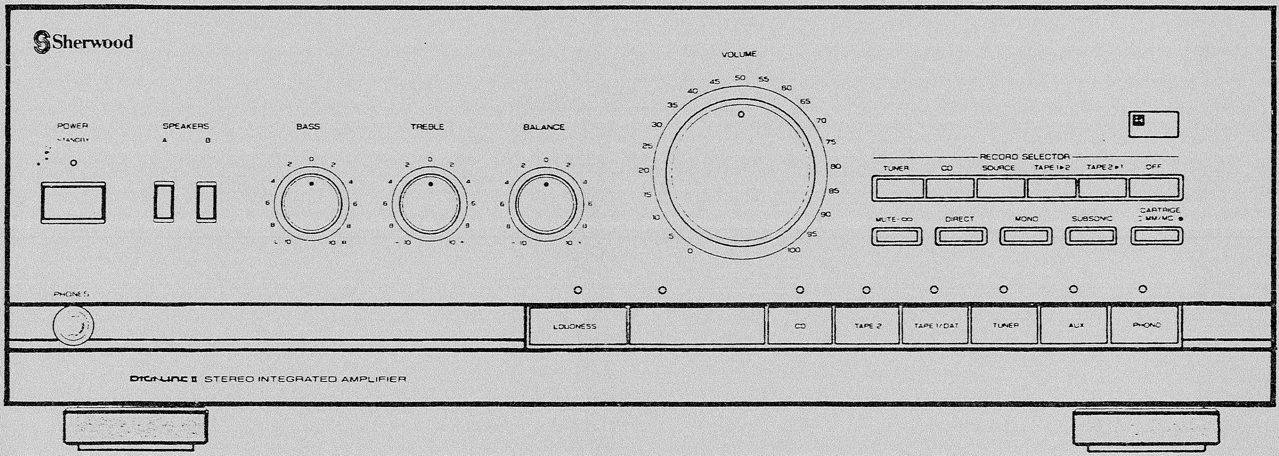
SERVICE MANUAL

AX-7010/15R

STEREO INTEGRATED AMPLIFIER


Sherwood
VOLUME
POWER
STANDBY
SPEAKERS
A
B
BASS
TREBLE
BALANCE
RECORD SELECTOR
TUNER
CD
SOURCE
TAPE 1▶2
TAPE 2▶1
OFF
MUTE
DIRECT
MONO
SUBSONIC
CARTRIDGE
MM/MC
PHONES
LOUDNESS
CD
TAPE 2
TAPE 1/DAT
TUNER
AUX
PHONO
STEREO INTEGRATED AMPLIFIER

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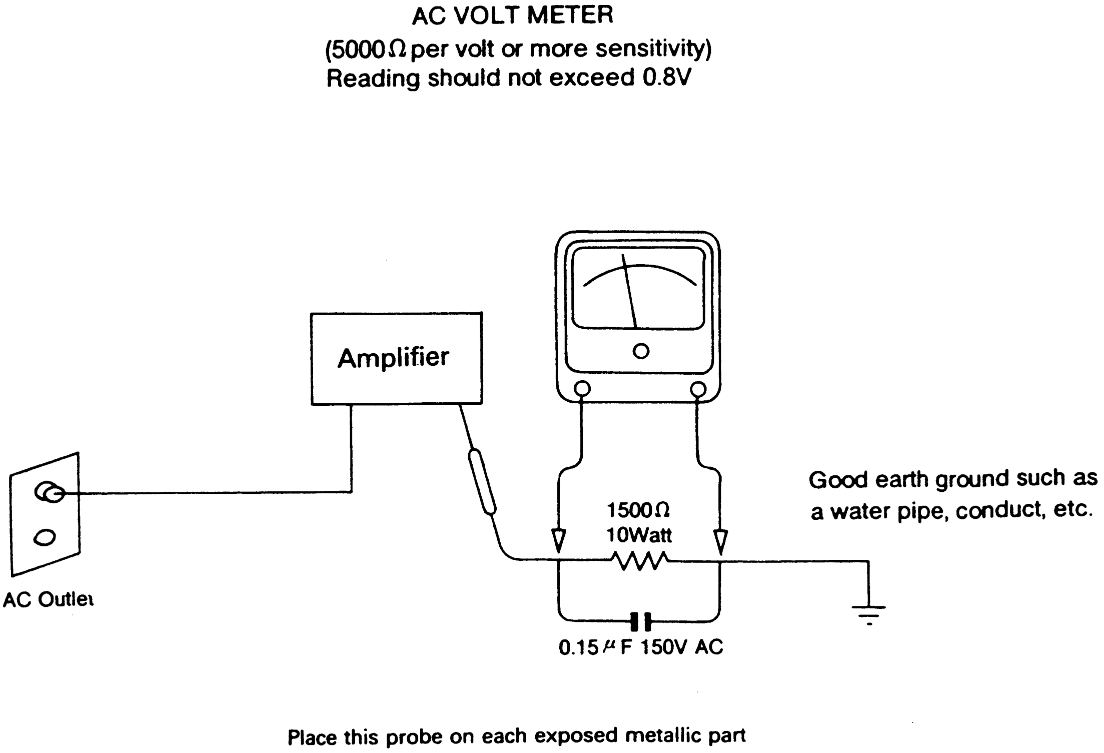
Sherwood

Safety Precaution

WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.
   Replacement parts that have these special safety characteristic are identified in this manual and its supplements : electrical components having such features are identified by a ⚠in the schematic diagram and the parts list.
   Before replacing any of these components, read the parts list in this manual carefully.
   The use of substitute replacement parts that do not have the same safety characterstics as specified in the parts list may create shock, fire or other hazards.
2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet(**120V Version only**).(Do not use a line isolation transformer during this check.)
   Use an AC voltmeter having 5000Ω per volt or more sensitivity in the following manner :
   Connect a 1500Ω 10watte resistor paralleled by a 0.15μF 150V AC capacitor, between a known good earth ground(water pipe, conduct, etc.)and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500Ω resistor and 0.15μF capacitor. Reverse the AC plug
   at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


AC VOLT METER
(5000Ω per volt or more sensitivity)
Reading should not exceed 0.8V
Amplifier
AC Outlet
1500Ω
10Watt
0.15μF 150V AC
Good earth ground such as a water pipe, conduct, etc.
Place this probe on each exposed metallic part

Specifications

European version

Power Output per channel	
IEC standard, 63 Hz to 12.5kHz, 8Ω	105W
DIN standard, 1kHz, 8Ω	110W
THD. -6 dB Rated Output, 8Ω, 1kHz	0.01%
IMD. -6 dB Rated Output, 8Ω	0.009%
Damping Factor at 1kHz, 8Ω	100
Input Sensitivity for 100W output, 8Ω at a 1kHz	
PHONO MC	0.3mV
MM	2.5mV
AUX / TUNER	170mV
Phono Preamp Input Overload at 1kHz, 0.1% THD MM / MC	160 / 16mV
Signal to Noise Ratio, IEC "A"wtd / unwtd	
PHONO MM : 5mV input, 2.2kΩ shorted, VOL ADJ 100W	74 / 66dB
AUX : 500mV input, 22kΩ shorted, VOL ADJ 100W	92 / 87dB
Prequency Response	
PHONO, RIAA 40-20,000Hz	±0.5dB
AUX at 1W, -3dB	5Hz-80kHz
Loudness Contour	
at 100Hz	+5dB
at 10 kHz	+3dB
Tone Control	
Bass at 100 Hz	±8dB
Treble at 10 kHz	±8dB
Power Consumption	740W
Amplifier Dimensions(W×H×D)	440(W)×125(H)×330(D)mm 17.3(W)×4.92(H)×12.9(D)inch
Amplifier Weight	11.5Kg(25lbs, 5.6ozs)

USA/Canadian version

Minimum Continuous Average Power Output PER CH.,
both channels driven with no more than 0.04% THD

at 8Ω, 1kHz	100W
at 8Ω, 20-20,000Hz	95W
Intermodulation Distortion, 60 Hz : 7kHz=4 : 1 SMPTE	
95W output into 8Ω	0.01%
Damping Factor at 1kHz, 8Ω	100
Input Sensitivity for 95W output, 8Ω at 1kHz	
PHONO MC	0.3mV
MM	2.5mV
AUX / TUNER	170mV
Phono Preamp Input Overload at 1kHz, 0.1% THD MM / MC	160 / 16mV
Signal to Noise Ratio, IHF "A"wtd / unwtd	
PHONO MC	68/ 60dB
MM	76 / 72dB
AUX(CD / TUNER)	92 / 87dB
Prequency Response	
PHONO, RIAA 40-20,000Hz	±0.5dB
AUX at 1W, -3dB	5Hz-80kHz
Loudness Contour at Loundness Point	
at 100 Hz	+5dB
at 10 kHz	+3dB
Tone Control	
Bass at 100 Hz	±8dB

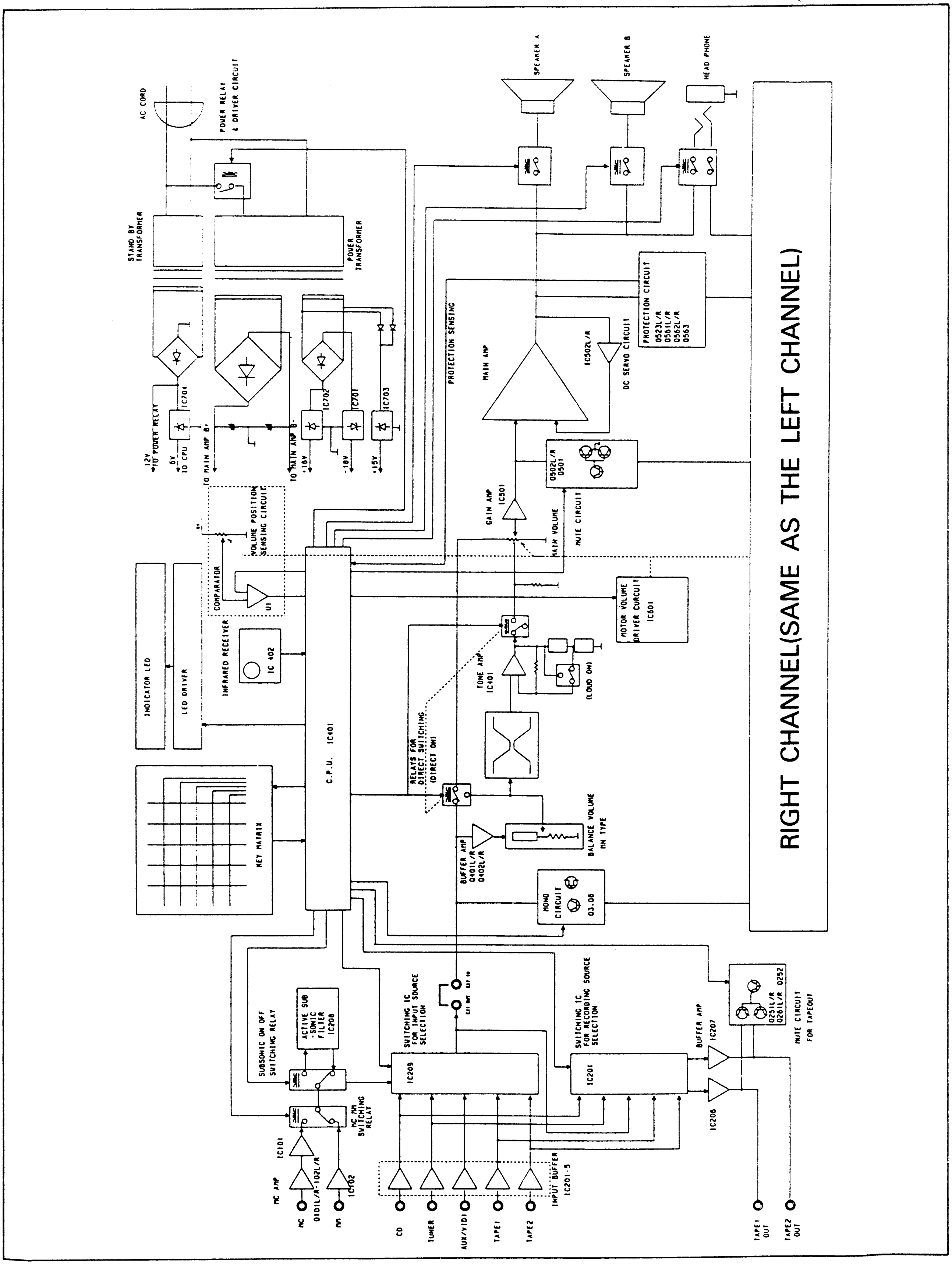
Treble at 10 kHz	±8dB
Channel Separation	
AUX→PHONO : 1kHz	66dB
PHONO→AUX : 1kHz	80dB
Power Consumption	250W

A : 120V 60Hz for USA / Canadian version
B : 120 / 220V 50 / 60Hz for multi-voltage version(switchable)
C : 230V 50Hz for General Europian version
D : 230V 50Hz for Germanian & Italian version
E : 240V 50Hz for British & Australian version
F : 230V 50Hz for Swiss & Scandinabian version

Amplifier Dimensions(W×H×D)	440(W)×125(H)×330(D)mm 17.3(W)×4.92(H)×12.9(D)inch
Amplifier Weight	11.5Kg(25lbs, 5.6ozs)

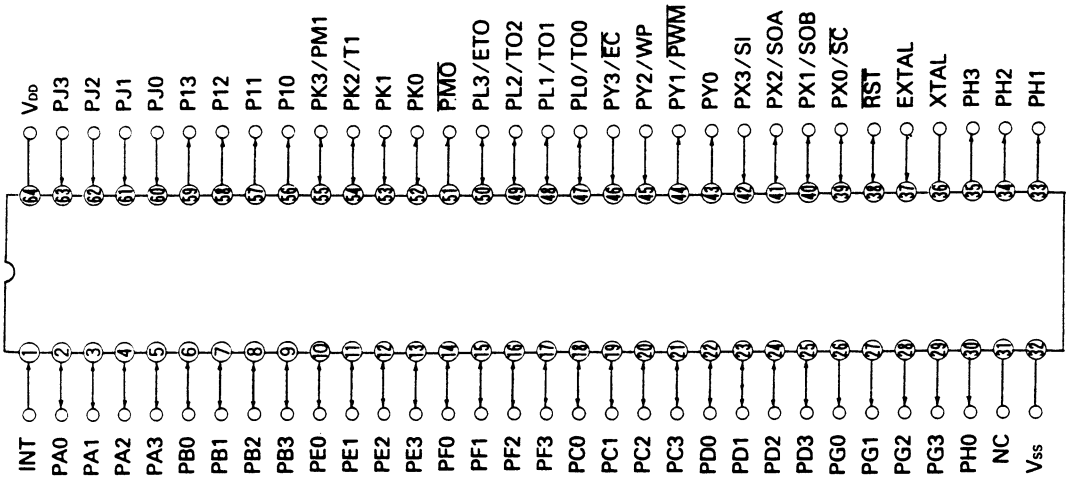
NOTE : Specifications and the design subject to change without notice for improvements. Component and circuitry are subject to modify to insure best operation under differing local conditions. This manual is based on the European standard, and provides information on regional circuit modification through use of alternate schematic or wiring diagram, and information on regional component variations through use of parts list.

Block Diagram


AC CORD
POWER RELAY & DRIVER CIRCUIT
STAND BY TRANSFORMER
POWER TRANSFORMER
12V TO POWER RELAY
6V TO CPU
TO MAIN AMP B+
TO MAIN AMP B-
+18V
-18V
+15V
IC704
IC702
IC701
IC703
SPEAKER A
SPEAKER B
HEAD PHONE
PROTECTION SENSING
MAIN AMP
IC502L/R
DC SERVO CIRCUIT
PROTECTION CIRCUIT
Q523L/R
Q561L/R
Q562L/R
Q563
Q502L/R
Q501
GAIN AMP
IC501
MAIN VOLUME
MUTE CIRCUIT
MOTOR VOLUME DRIVER CIRCUIT
IC601
VOLUME POSITION SENSING CIRCUIT
COMPARATOR
U1
INDICATOR LED
LED DRIVER
INFRARED RECEIVER
IC 402
C.P.U. IC401
KEY MATRIX
TONE AMP
IC401
(LOUD ON)
RELAYS FOR DIRECT SWITCHING (DIRECT ON)
BUFFER AMP
Q401L/R
Q402L/R
BALANCE VOLUME MN TYPE
MONO CIRCUIT
Q3.Q6
RIGHT CHANNEL(SAME AS THE LEFT CHANNEL)
SUBSONIC ON OFF SWITCHING RELAY
ACTIVE SUB-SONIC FILTER
IC208
SWITCHING IC FOR INPUT SOURCE SELECTION
IC209
EXT OUT
EXT IN
SWITCHING IC FOR RECORDING SOURCE SELECTION
IC201
BUFFER AMP
IC207
IC206
Q251L/R
Q261L/R
Q252
MUTE CIRCUIT FOR TAPEOUT
MC AMP
IC101
Q101L/R-102L/R
IC102
MC MM SWITCHING RELAY
MC
MM
INPUT BUFFER
IC201-5
CD
TUNER
AUX/VID1
TAPE1
TAPE2
TAPE1 OUT
TAPE2 OUT

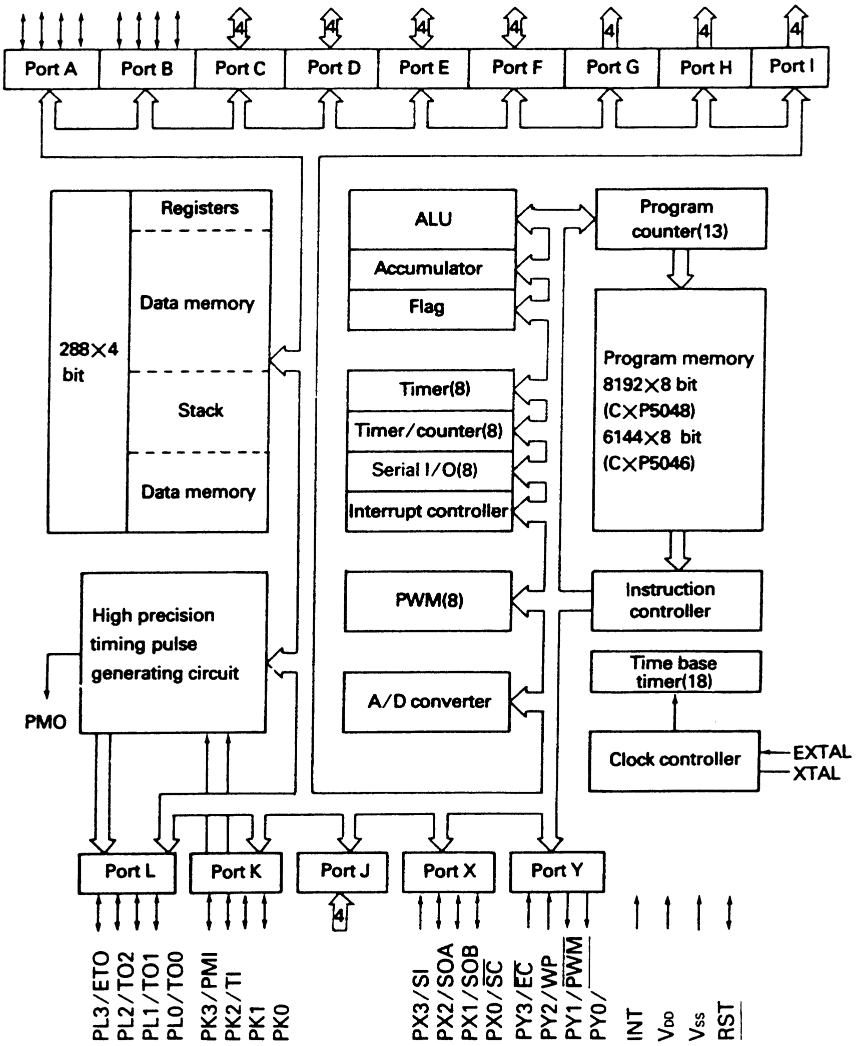
Circuit Description

CXP950P48,CPU : IC401


64
VDD
63
PJ3
62
PJ2
61
PJ1
60
PJ0
59
P13
58
P12
57
P11
56
P10
55
PK3/PM1
54
PK2/T1
53
PK1
52
PK0
51
PMO
50
PL3/ETO
49
PL2/TO2
48
PL1/TO1
47
PL0/TO0
46
PY3/EC
45
PY2/WP
44
PY1/PWM
43
PY0
42
PX3/SI
41
PX2/SOA
40
PX1/SOB
39
PX0/SC
38
RST
37
EXTAL
36
XTAL
35
PH3
34
PH2
33
PH1
1
INT
2
PA0
3
PA1
4
PA2
5
PA3
6
PB0
7
PB1
8
PB2
9
PB3
10
PE0
11
PE1
12
PE2
13
PE3
14
PF0
15
PF1
16
PF2
17
PF3
18
PC0
19
PC1
20
PC2
21
PC3
22
PD0
23
PD1
24
PD2
25
PD3
26
PG0
27
PG1
28
PG2
29
PG3
30
PH0
31
NC
32
VSS

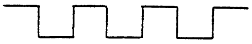
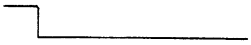
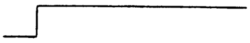
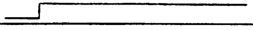
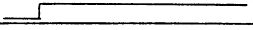
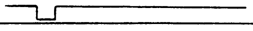
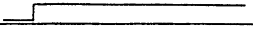
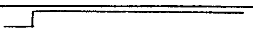
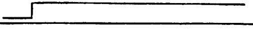
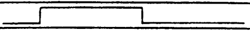
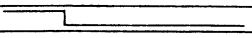
Block Diagram

(Each bit specifiable for input or output) (Each port specifiable for input or output) (Medium :breakdown voltage output)

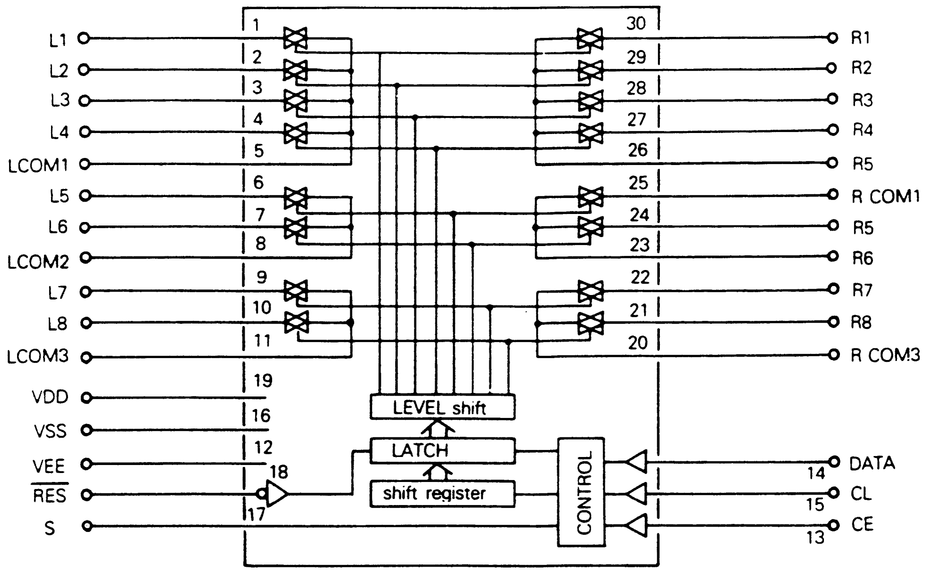

4
Port A
Port B
Port C
Port D
Port E
Port F
Port G
Port H
Port I
Registers
Data memory
288×4 bit
Stack
Data memory
ALU
Accumulator
Flag
Program counter(13)
Program memory 8192×8 bit (CXP5048) 6144×8 bit (CXP5046)
Timer(8)
Timer/counter(8)
Serial I/O(8)
Interrupt controller
PWM(8)
Instruction controller
High precision timing pulse generating circuit
PMO
A/D converter
Time base timer(18)
Clock controller
EXTAL
XTAL
Port L
Port K
Port J
Port X
Port Y
PL3/ETO
PL2/TO2
PL1/TO1
PL0/TO0
PK3/PMI
PK2/TI
PK1
PK0
PX3/SI
PX2/SOA
PX1/SOB
PX0/SC
PY3/EC
PY2/WP
PY1/PWM
PY0/
INT
VDD
VSS
RST

Doubles as A/D converter analog input

CXP950P48 : IC401,CPU

No.	TERMINAL	OPERTING CHART	REMARKS
1	INT		
2	PA0		KEY SCAN OUTPUT
3	PA1		〃
4	PA2		〃
5	PA3		〃
6	PB0		〃
7	PB1(RMC OUT)		REMOCON CONTROL DATA OUT FOR OTHER SET
8	PB2(RMC TAPE)		REMOCON CONTROL DATA FOR MECHANICAL TAPE DECK ONLY
9	PB3		KEY SCAN INPUT
10	PE0		〃
11	PE1		〃
12	PE2		〃
13	PE3		〃
14	PF0(LED T-RU)		LED ON/OFF CONTROL SIGINAL OUTPUT
15	PF1(RELAY-HP)	〃	〃
16	PF2(LED-T2)	〃	〃
17	PF3(LED R-CD)	〃	〃
18	PC0(LED R-S)	〃	〃
19	PC1(LED-T1)	〃	〃
20	PC2(LED-M)	〃	〃
21	PC3(LED-TU)	〃	〃
22	PD0(LED-AI)	〃	〃
23	PD1(LED-CD)	〃	〃
24	PD2(LED T-TU2)	〃	〃
25	PD3(LED-AUX)	〃	〃
26	PG0(LED R-PH)	〃	〃
27	PG1(LED R-T2>1)	〃	〃
28	PG2(LED R-OFF)	〃	〃
29	PG3(STRORE)		SWITCHING IC ENABLE
30	PH0		
31	NC		
32	VSS(GROUND)		
33	PH1(PWR-RELAY)		POWER RELAY ON/OFF
34	P2(SPKR-B)	〃	SPEAKER RELAY ON/OFF
35	PH3(SPKR-A)	〃	〃
36	X-TAL		
37	EX-TAL		
38	RST(RESET)		CPU RESET PULSE INPUT
39	PX0(CLOCK)		CPU CLOCK FOR SWITCH
40	PX1(DATA)		CPU DATA FOR SWITCH
41	PX2(VOL SENSOR)		COMPARATOR(IC)OUTPUT IN
42	PX3(RMC IN)		INFRARED SENSOR OUTPUT IN
43	PY0(M-MUTE)		MAIN AMP MUTE SIGINAL OUT
44	PY1(VAR-DC)		
45	PY2(PULL-UP)		
46	PY3(NC)		
47	PL0(LED-MM/MC)		MM/MC FANCTION LED ON/OFF
48	PL1(NC)		
49	PL2(T-MUTE)		TAPE OUT BUFFER MUTING
50	PL3(LED SUBS)	〃	SUBSOMIC LED ON/OFF
51	PM0(NC)		
52	PK0(LED-DIR)		DIRECT LED ON/OFF
53	PK1(LED-POWER)	〃	POWER LED ON/OFF
54	PK2(SP A-LED)	〃	SPEAKER A LED ON/OFF
55	PK3(SP B-LED)	〃	SPEAKER B LED ON/OFF
56	PIO(MONO-LED)	〃	MONO LED ON/OFF
57	PI1(LED-VOLUME)		VOLUME LED ON/OFF
58	PI2(VOL-UP)		MOTOR VOLUME LED UP
59	PI3(VOL-DOWN)	〃	MOTOR VOLUME LED DOWN
60	PJ0(GROUND)		
61	PJ1(PRO TSENS)		PROTECTION SENSING
62	PJ2(GROUND)		
63	PJ3(GROUND)		
64	VDD(VDD)		

LC7821 : IC209,IC210(Switching IC)


L1
L2
L3
L4
LCOM1
L5
L6
LCOM2
L7
L8
LCOM3
VDD
VSS
VEE
RES
S
1
2
3
4
5
6
7
8
9
10
11
19
16
12
18
17
30
29
28
27
26
25
24
23
22
21
20
14
15
13
R1
R2
R3
R4
R5
R COM1
R5
R6
R7
R8
R COM3
DATA
CL
CE
LEVEL shift
LATCH
shift register
CONTROL

FOR INPUT SELECTOR(IC209)

PIN NO.	TERMINAL	DESCRIPTION
1	AUX	
2	CD	input output terminals of
3	TUNER	audio signal of left channel
4	PHONE	
5		Control to the inside
6		analog switch at the serial
7	TAPE1	data
8		
9		
10	TAPE2	
11	SIGNAL OUT PUT	output
12	VEE	Negative power Supply terminal-18V
13	STROBE	Sertial Control terminal
14	DATA	Connect terminal of
15	CLOCk	CPU IC
16	VSS	
17	S	Ground terminal
18	RES	Reset terminal When power is turned ON. the Condition of the analog switch is not determined. but when this terminal is L all analog switches are OFF.
19	VDD	Power Supply terminal(-18V)
20	Sig output	
21	TAPE2	Input Output terminals of
22		audio signal of right
23		channel
24	TAPE1	Control to the inside analog
25		switch at the serial data
26		
27	phono	
28	tuner	Power Supply terminal(-15V)
29	CD	
30	AUX	

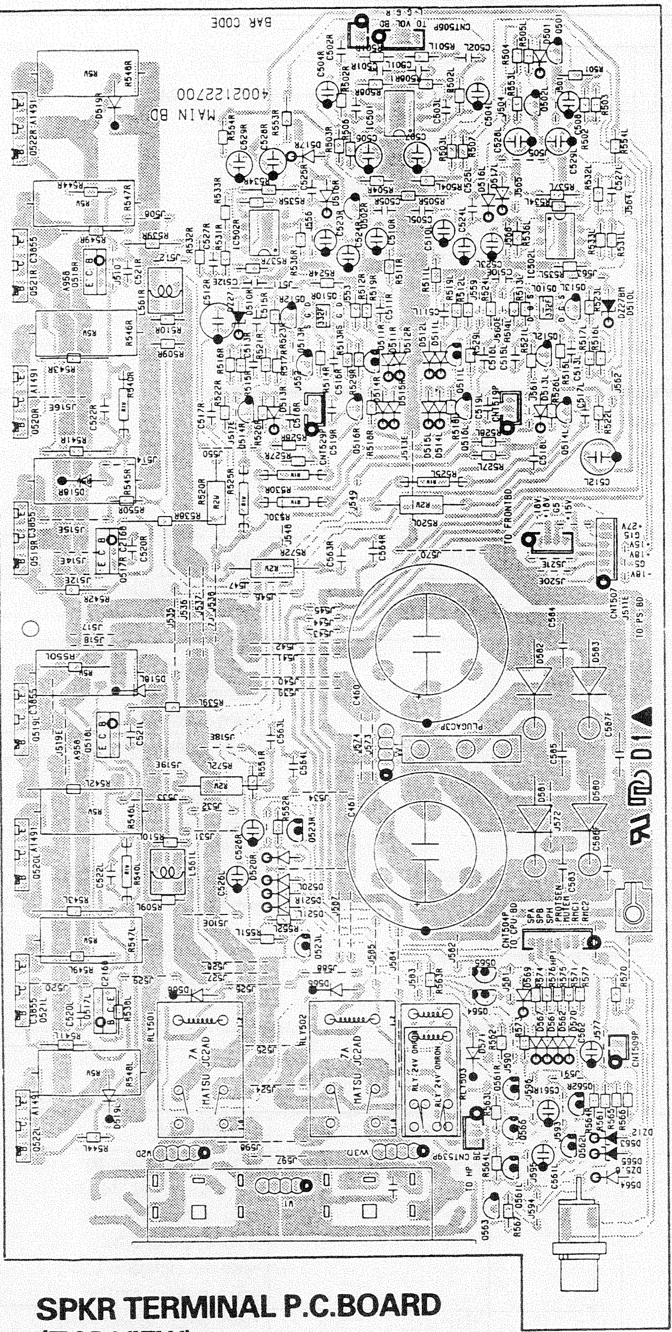
FOR REC SELECTOR(IC210)

PIN NO.	TERMINAL	DESCRIPTION
1	NC	
2	CD	input output terminals of
3	TUNER	audio signal of left channel
4	SOURCE	
5		Control to the inside
6	TAPE1 IN	analog switch at the serial
7	TAPE2 IN	data
8		
9	TAPE1 OUT	
10	TAPE2 OUT	
11		
12	VEE	Negative power Supply terminal-18V
13	STROBE	Serial Control terminal
14	DATA	Connect terminal of
15	CLOCk	CPU IC
16	VSS	
17	S	Ground terminal
18	RES	Reset terminal When power is turned ON. the Condition of the analog switch is not determined. but when this terminal is L all analog switches are OFF.
19	VDD	Power Supply terminal(-18V)
20		
21	TAPE2 OUT	Input Output terminals of
22		audio signal of right
23	TAPE1 OUT	channel
24	TAPE2 IN	Control to the inside analog
25	TAPE1 IN	switch at the serial data
26		
27	SOURCE	
28	TUNER	Power Supply terminal(-18V)
29	CD	
30	NC	

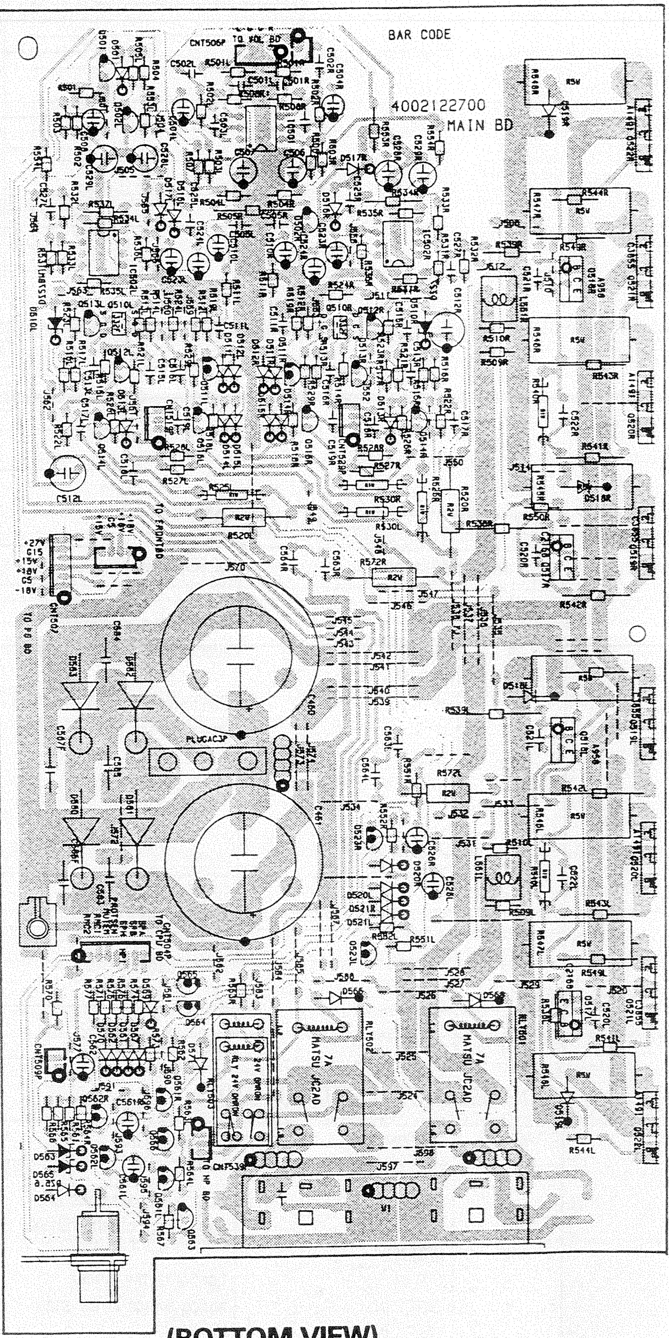
P.C. Boards(Top & Bottom Views)

MAIN P.C.BOARD

(TOP VIEW)

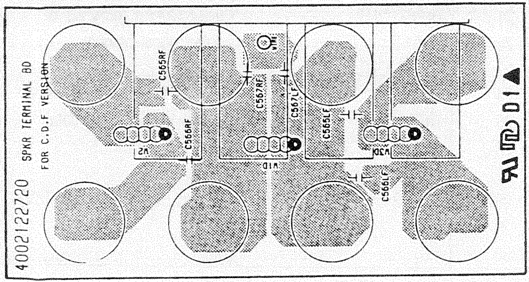

BAR CODE
4002122700
MAIN BD
CNT506P
TO VOL BD
TO FRONT BD
TO CPU BD
TO PS BD
TO HP BD
PLUGAC3P
MATSU JC2AD
7A
RLY501
RLY502
RLY503

(BOTTOM VIEW)

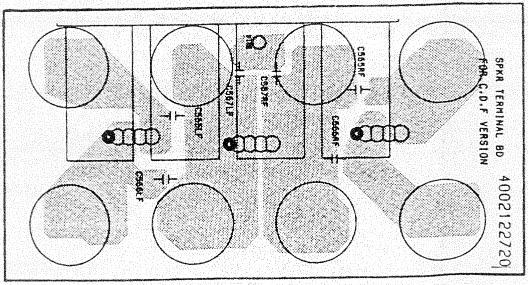

BAR CODE
4002122700
MAIN BD
CNT506P
TO VOL BD
TO FRONT BD
TO CPU BD
TO PS BD
TO HP BD
PLUGAC3P
MATSU JC2AD
7A
RLY501
RLY502

SPKR TERMINAL P.C.BOARD

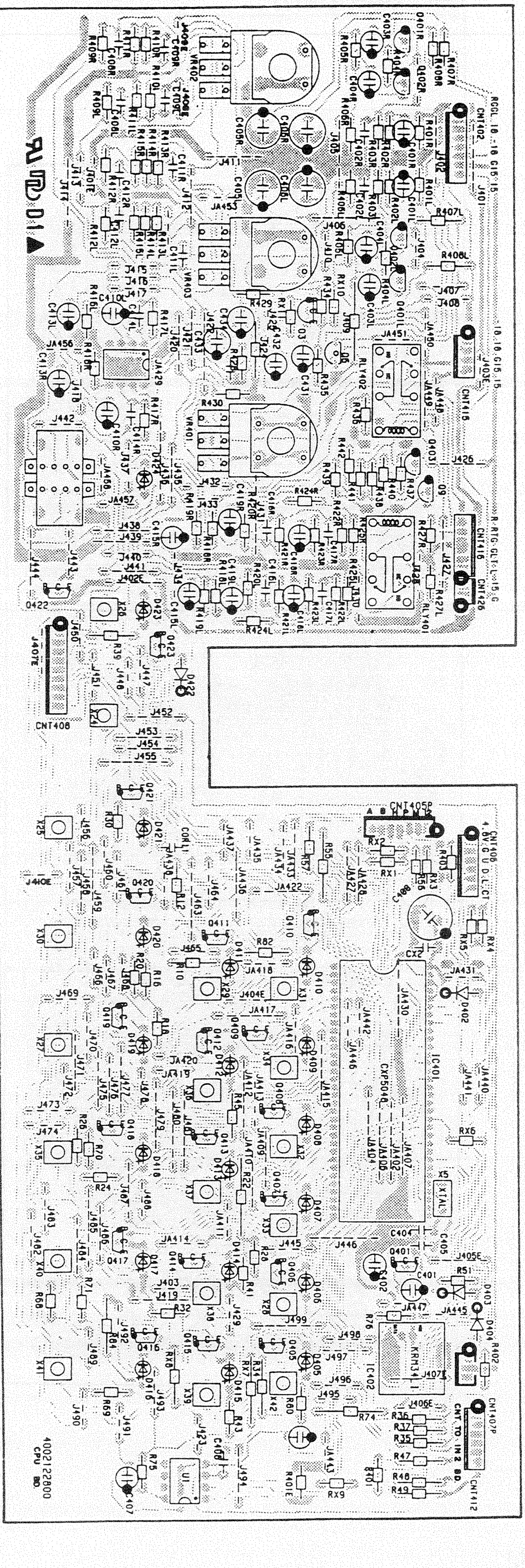
(TOP VIEW)


4002122720
SPKR TERMINAL BD
FOR C.D.F VERSION
C565AF
C566AF
C567AF
C567LF
C565LF
C566LF

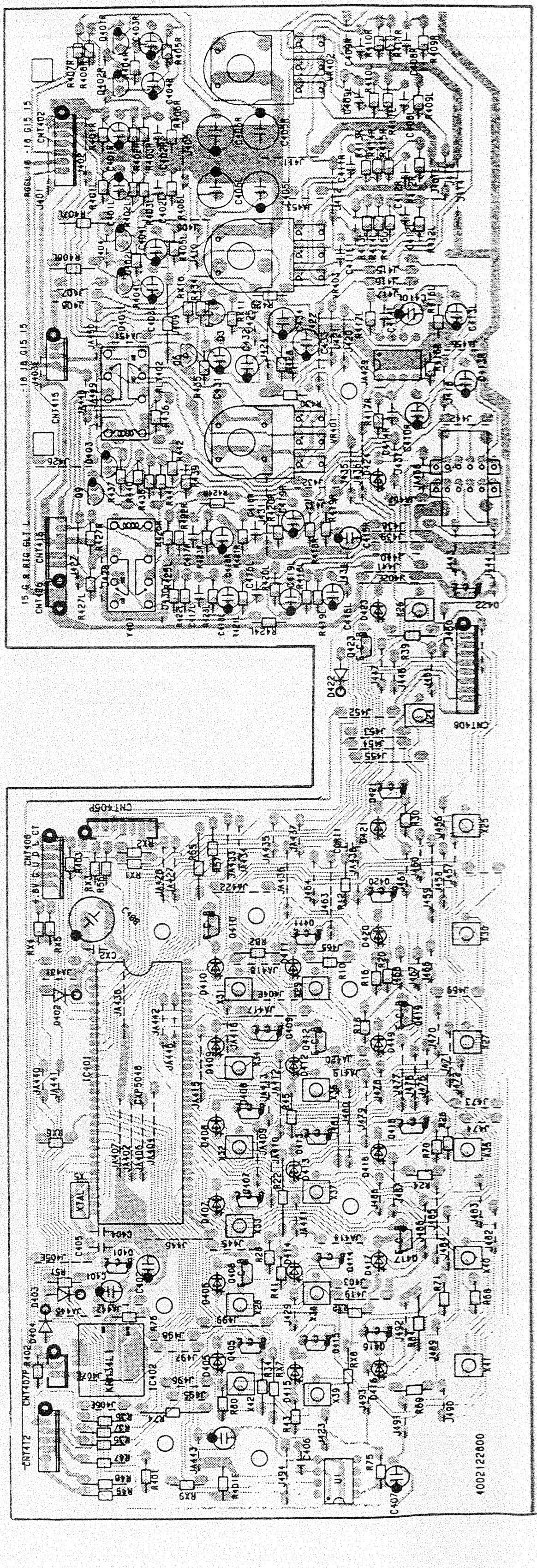
(BOTTOM VIEW)


4002122720
SPKR TERMINAL BD
FOR C.D.F VERSION
C565RF
C567RF
C567LF
C566RF
C565LF
C566LF

CPU P.C.BOARD
(TOP VIEW)

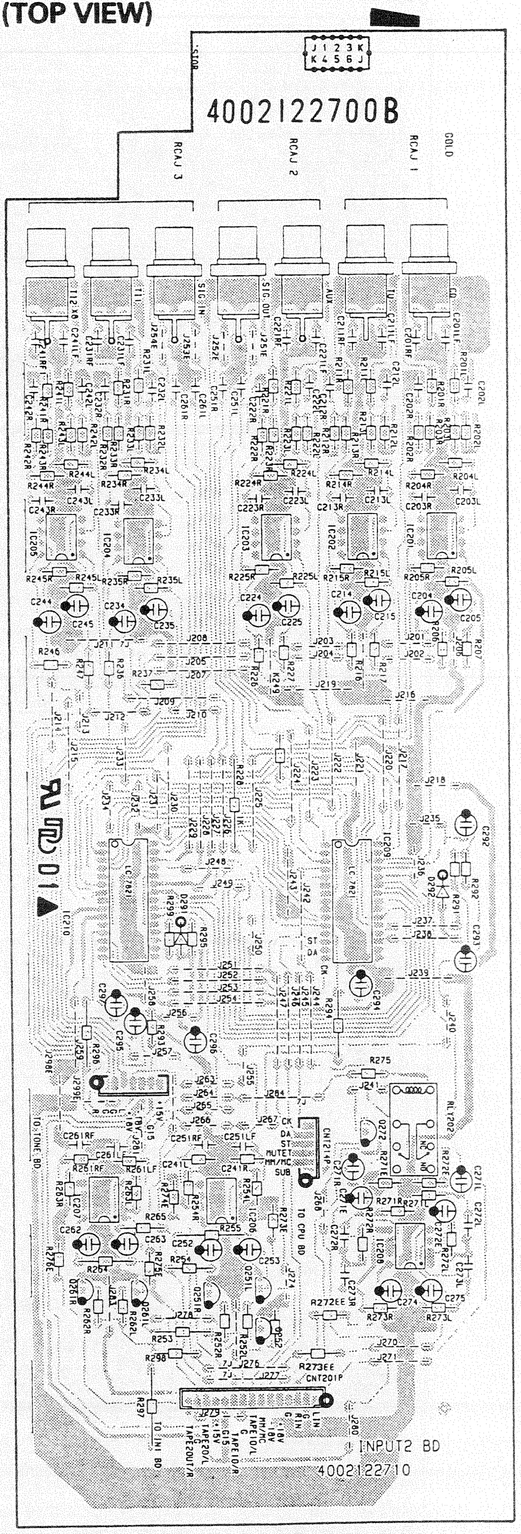

CNT402
CNT403E
CNT416
CNT426
CNT408
CNT405P
CNT406
CNT407P
CNT412
IC401
CXP5046
IC402
KRH341
XTAL
RLY401
RLY402
4002122800
CPU BD

(BOTTOM VIEW)

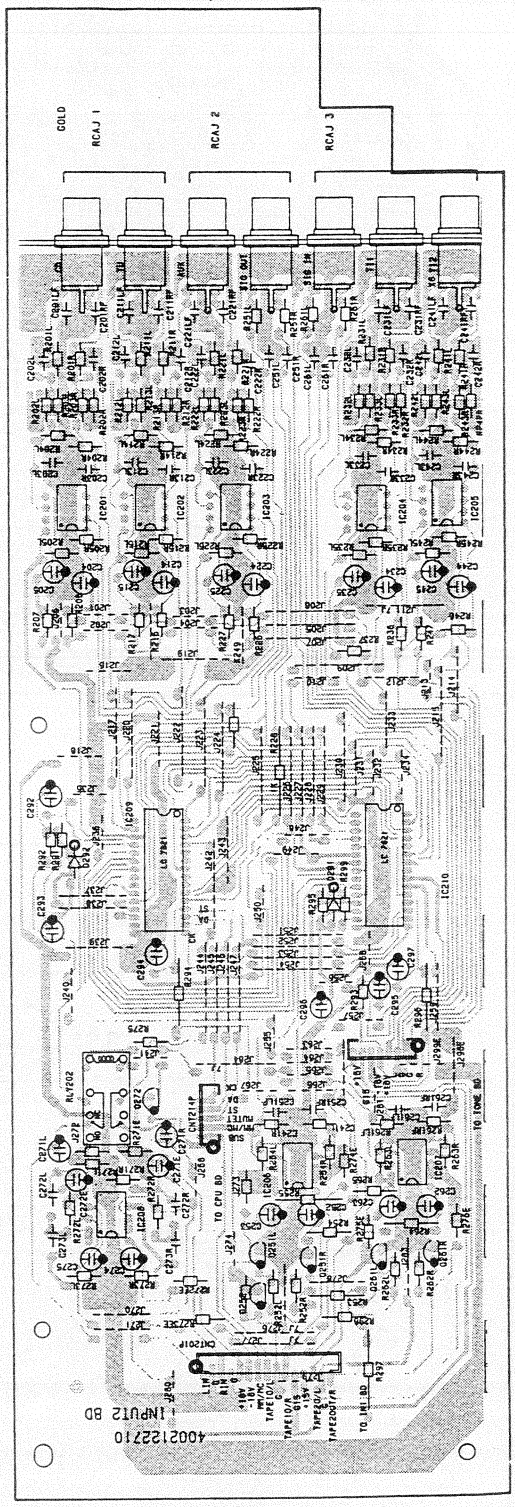

CNT402
CNT415
CNT416
CNT408
CNT405P
CNT406
CNT407P
CNT412
IC401
CXP5046
IC402
KRH341
XTAL
4002122800

INPUT2 P.C.BOARD

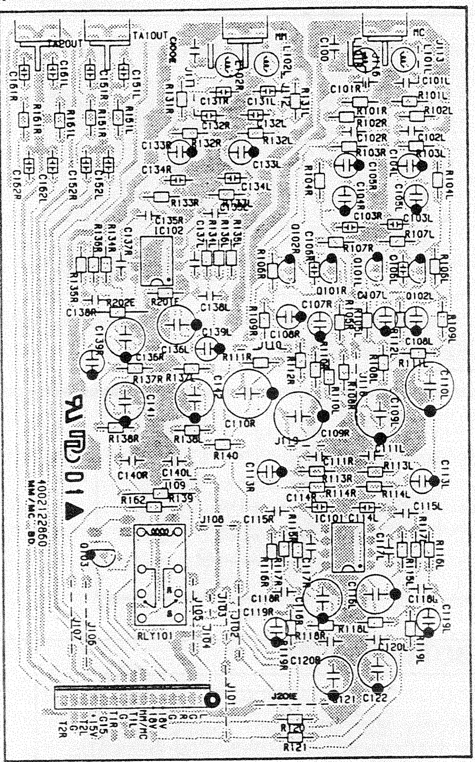
(TOP VIEW)


J1 2 3 K
K 4 5 6 J
4002122700B
RCAJ 3
RCAJ 2
RCAJ 1
GOLD
IC205
IC204
IC203
IC202
IC201
IC209
IC210
TO TONE BD
TO CPU BD
CNT201P
TO IN1 BD
INPUT2 BD
4002122710

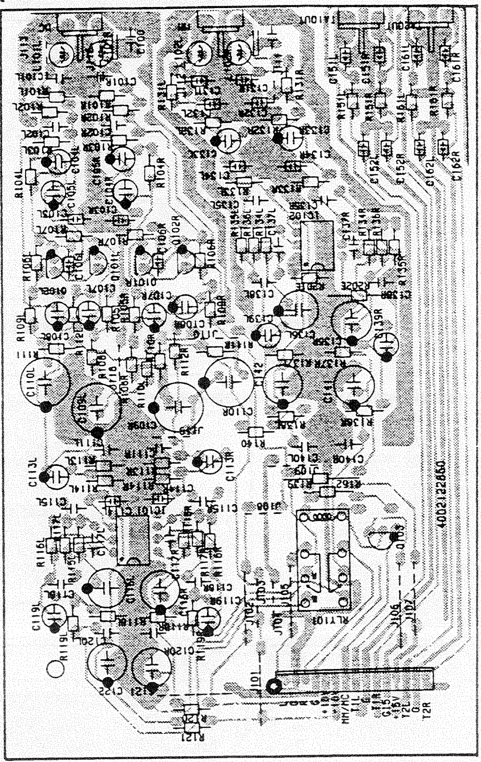
(BOTTOM VIEW)


GOLD
RCAJ 1
RCAJ 2
RCAJ 3
IC201
IC202
IC203
IC204
IC205
IC209
IC210
TO TONE BD
TO CPU BD
TO IN1 BD
INPUT2 BD
4002122710

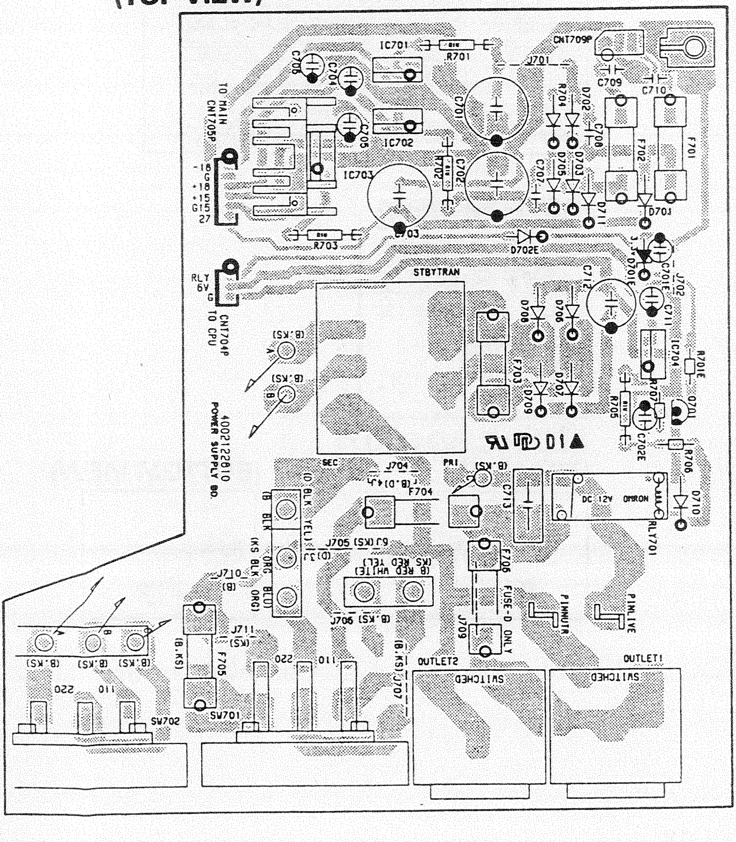
MM / MC P.C.BOARD
(TOP VIEW)


TA2OUT
TA1OUT
MM
MC
RLY101
4002122860
MM/MC BD.
T2R
T2L
+15V
G15
-15V
J101
J201E
R120
R121
C121
C122

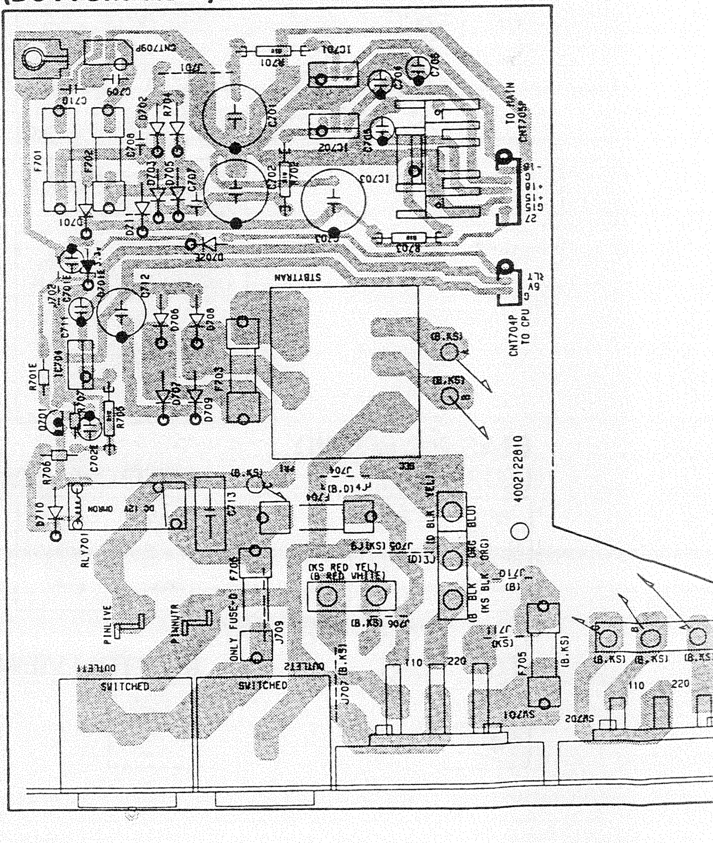
(BOTTOM VIEW)


4002122860
RLY101
R121

POWER SUPPLY P.C.BOARD
(TOP VIEW)

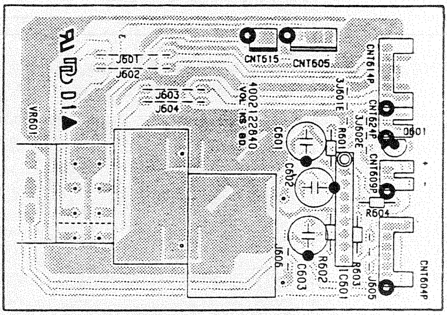

IC701
R701
CNT709P
J701
IC702
IC703
TO MAIN CNT705P
-18
G
+18
+15
G15
27
R703
D702E
STBYTRAN
RLY 6V G
CNT704P TO CPU
(B.KS)
4002122810 POWER SUPPLY BD.
SEC
PRI
J704
F704
DC 12V OMRON
RLY701
J705
J706
J709
FUSE-D ONLY
PINHUTR
PINLIVE
OUTLET2
OUTLET1
SWITCHED
J707
J711
F705
SW701
SW702
220
110

(BOTTOM VIEW)

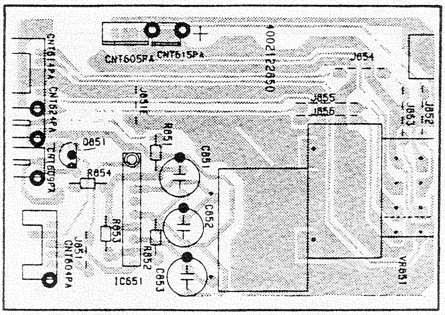

4002122810
STBYTRAN
RLY701
OUTLET1
OUTLET2
SWITCHED
SW701
SW702
110
220

VOL KS P.C.BOARD

(TOP VIEW)

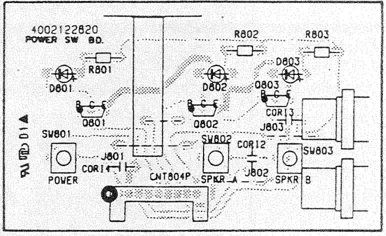

J601
J602
J603
J604
CNT615
CNT605
CNT614P
CNT624P
CNT609P
CNT604P
3J602E
3J601E
4002122840
VOL KS BD
C601
C602
C603
R601
R602
R603
R604
IC601
D601
J605
J606
VR601
D1

(BOTTOM VIEW)

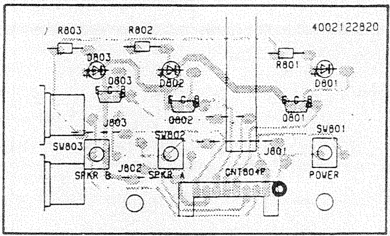

CNT605PA
CNT615PA
4002122850
CNT614PA
CNT624PA
CNT609PA
CNT604PA
J854
J855
J856
J852
J853
J851E
J851
Q851
R851
R852
R853
R854
C851
C852
C853
IC651
VR851

POWER SW P.C.BOARD

(TOP VIEW)

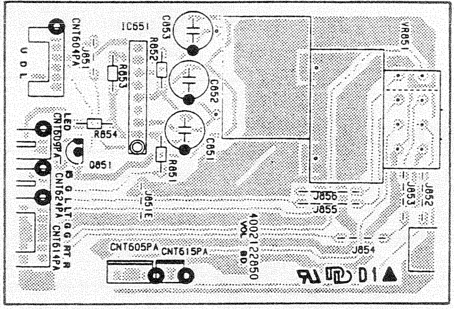

4002122820
POWER SW BD.
R801
R802
R803
D801
D802
D803
Q801
Q802
Q803
COR13
COR12
COR11
J801
J802
J803
SW801
SW802
SW803
POWER
CNT804P
SPKR A
SPKR B
D1

(BOTTOM VIEW)

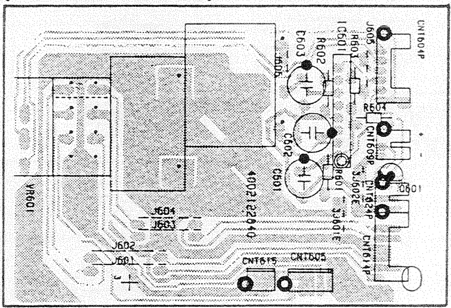

R803
R802
R801
4002122820
D803
D802
D801
Q803
Q802
Q801
J803
J802
J801
SW803
SW802
SW801
SPKR B
SPKR A
CNT804P
POWER

VOL P.C.BOARD

(TOP VIEW)

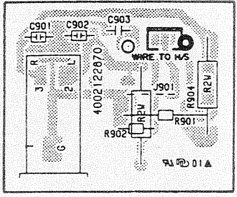

CNT604PA
U D L
IC651
C853
C852
C851
R852
R853
R854
R851
Q851
LED
CNT609PA
CNT624PA
CNT614PA
J851
J851E
J856
J855
J853
J852
J854
VR851
CNT605PA
CNT615PA
4002122850
VOL BD
D1

(BOTTOM VIEW)

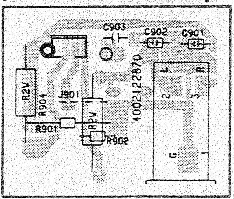

CNT604P
J605
J606
IC601
R603
R602
R601
R604
C603
C602
C601
CNT609P
CNT624P
CNT614P
3J602E
3J601E
D601
4002122840
J604
J603
J602
J601
CNT615
CNT605
VR601

HP.P.C.BOARD

(TOP VIEW)

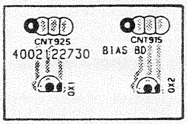

C901
C902
C903
WIRE TO H/S
4002122870
J901
R904
R2V
R901
R902
G
D1

(BOTTOM VIEW)

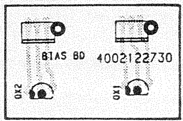

C903
C902
C901
4002122870
R2V
R904
J901
R901
R902
G

BIAS P.C.BOARD

(TOP VIEW)

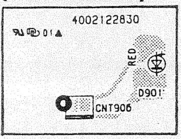

CNT925
CNT915
4002122730
BIAS BD
DX1
DX2

(BOTTOM VIEW)

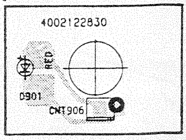

BIAS BD
4002122730
DX2
DX1

RED P.C.BOARD

(TOP VIEW)

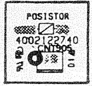

4002122830
D1
RED
D901
CNT906

(BOTTOM VIEW)

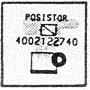

4002122830
RED
D901
CNT906

POSISTOR P.C.BOARD

(TOP VIEW)

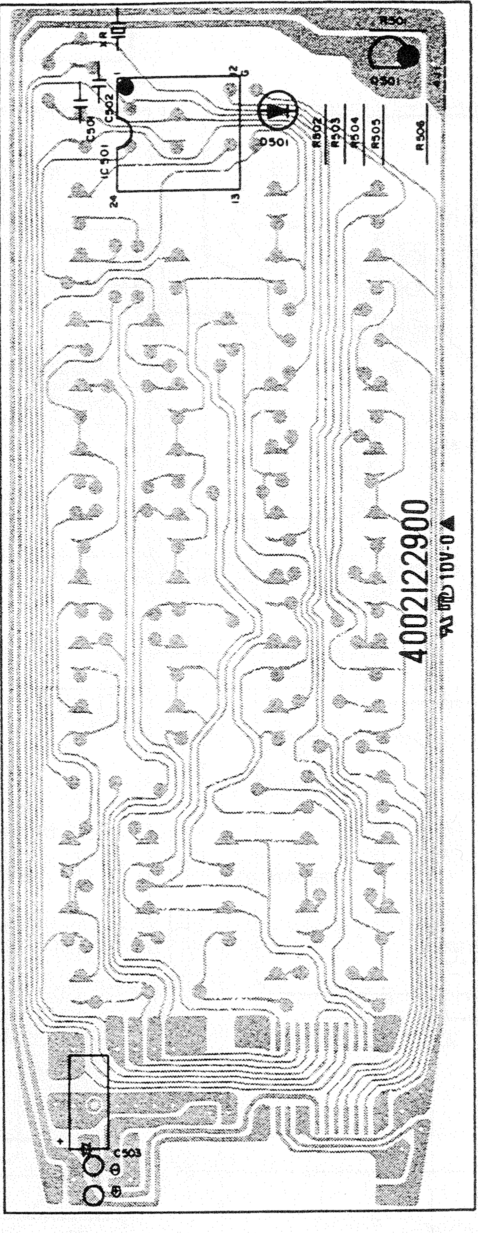

POSISTOR
4002122740
CNT905
D1

(BOTTOM VIEW)

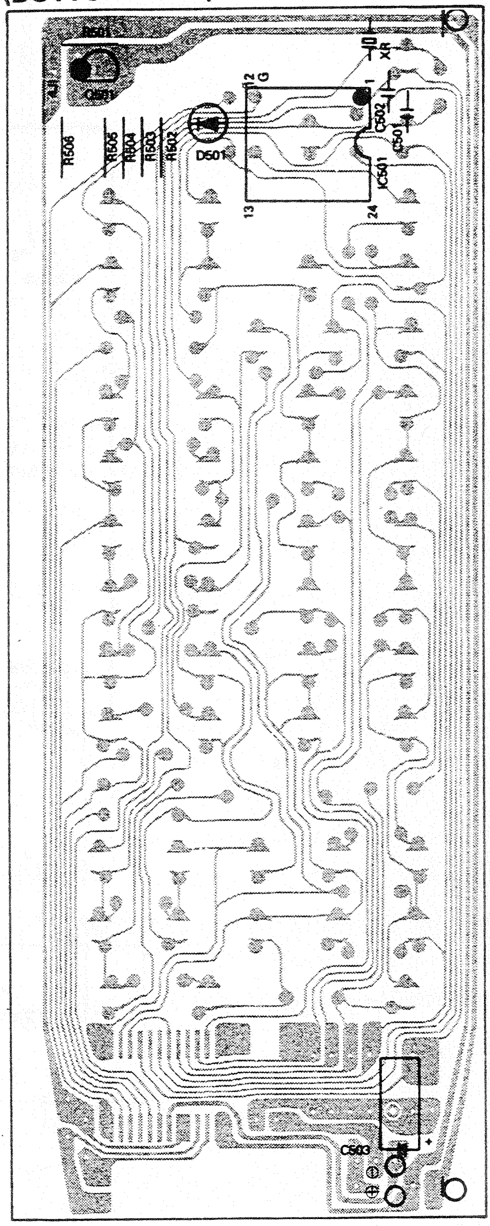

POSISTOR
4002122740

Remocon P.C.BOARD

(TOP VIEW)

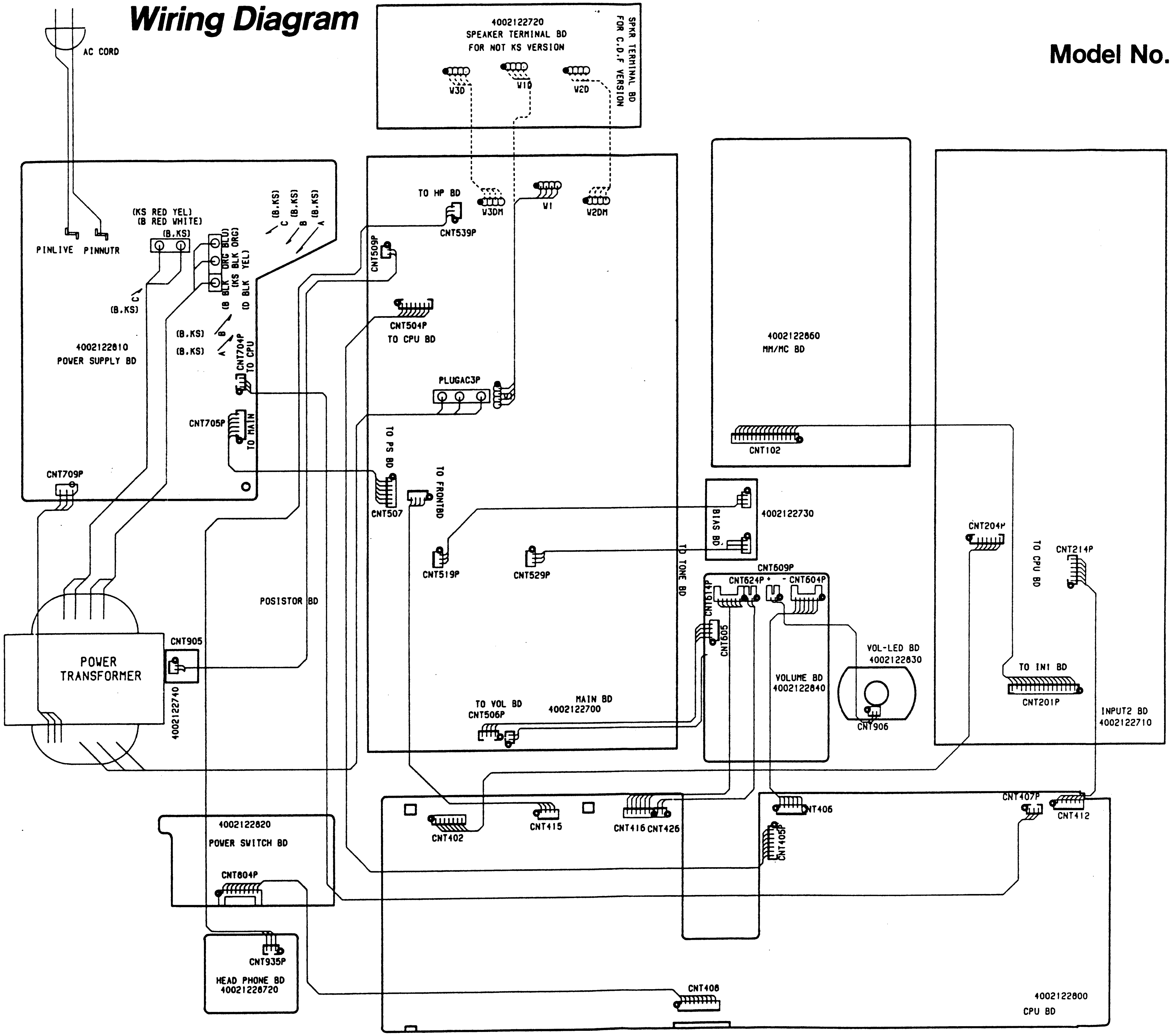

R501
XR
Q501
C502
C501
IC501
1
12
G
24
13
D501
R502
R503
R504
R505
R506
4002122900
10V-0
C503
⊖
⊕

(BOTTOM VIEW)


R501
Q501
XR
R506
R505
R504
R503
R502
D501
12
G
1
13
24
C502
C501
IC501
C503
⊖
⊕

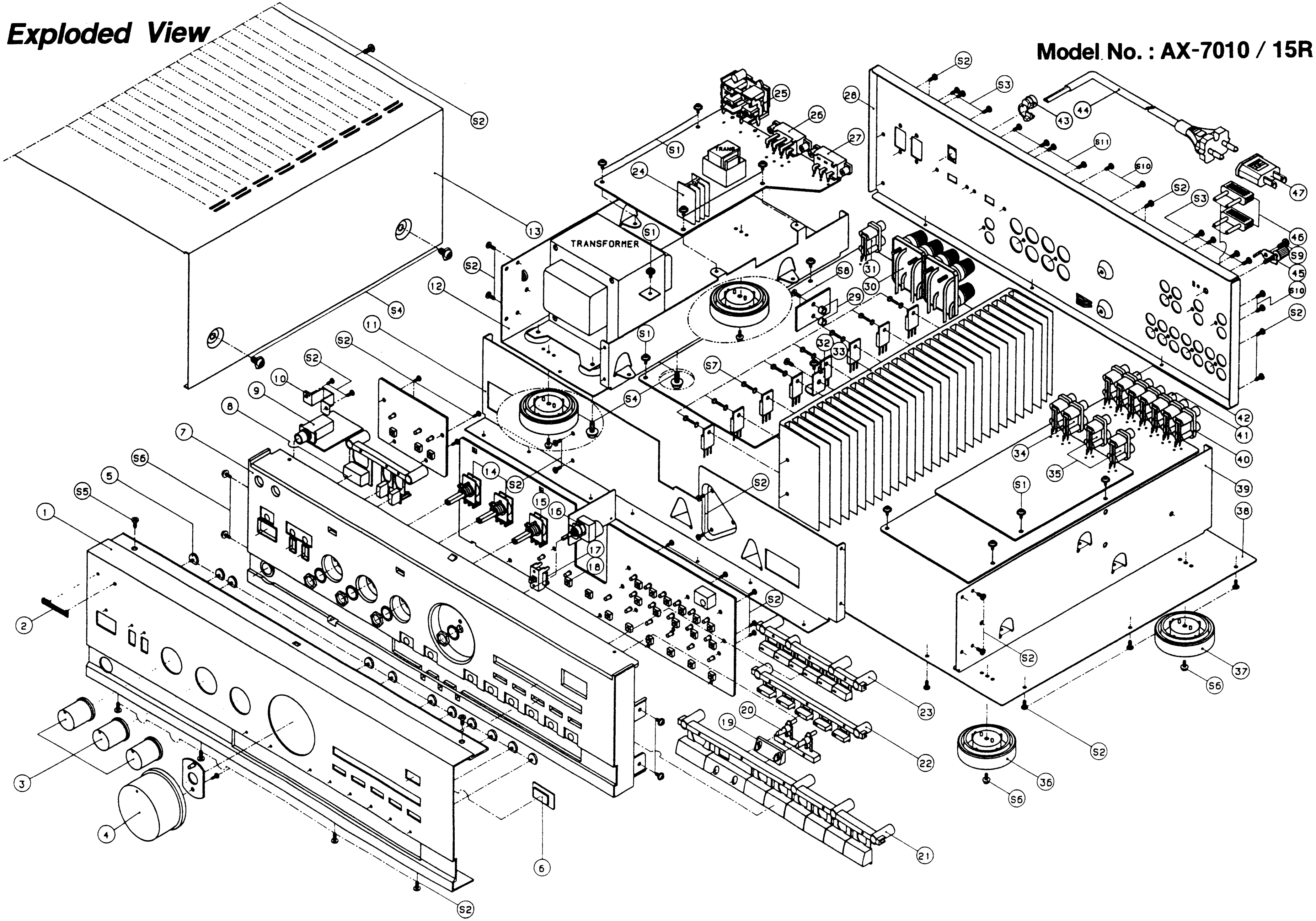
Wiring Diagram

Model No. : AX-7010 / 15R


AC CORD
4002122720
SPEAKER TERMINAL BD
FOR NOT KS VERSION
SPKR TERMINAL BD
FOR C.D.F VERSION
W3D
W1D
W2D
PINLIVE
PINNUTR
(KS RED YEL)
(B RED WHITE)
(B.KS)
(B BLK ORG BLU)
(KS BLK ORG)
(D BLK YEL)
(B.KS)
C
(B.KS)
B
(B.KS)
A
C
(B.KS)
(B.KS)
B
(B.KS)
A
CNT704P
TO CPU
4002122810
POWER SUPPLY BD
CNT705P
TO MAIN
CNT709P
TO HP BD
CNT539P
W3DM
W1
W2DM
CNT509P
CNT504P
TO CPU BD
PLUGAC3P
TO PS BD
CNT507
TO FRONTBD
CNT519P
CNT529P
TO TONE BD
TO VOL BD
CNT506P
MAIN BD
4002122700
4002122860
MM/MC BD
CNT102
BIAS BD
4002122730
CNT609P
CNT624P
+
-
CNT604P
CNT614P
CNT605
VOLUME BD
4002122840
VOL-LED BD
4002122830
CNT906
CNT204P
TO CPU BD
CNT214P
TO IN1 BD
CNT201P
INPUT2 BD
4002122710
POSISTOR BD
CNT905
POWER
TRANSFORMER
4002122740
4002122820
POWER SWITCH BD
CNT804P
CNT935P
HEAD PHONE BD
4002122B720
CNT402
CNT415
CNT416
CNT426
CNT406
CNT405P
CNT407P
CNT412
CNT408
4002122800
CPU BD

Exploded View

Model. No. : AX-7010 / 15R



TRANSFORMER
TRANS
1
2
3
4
5
6
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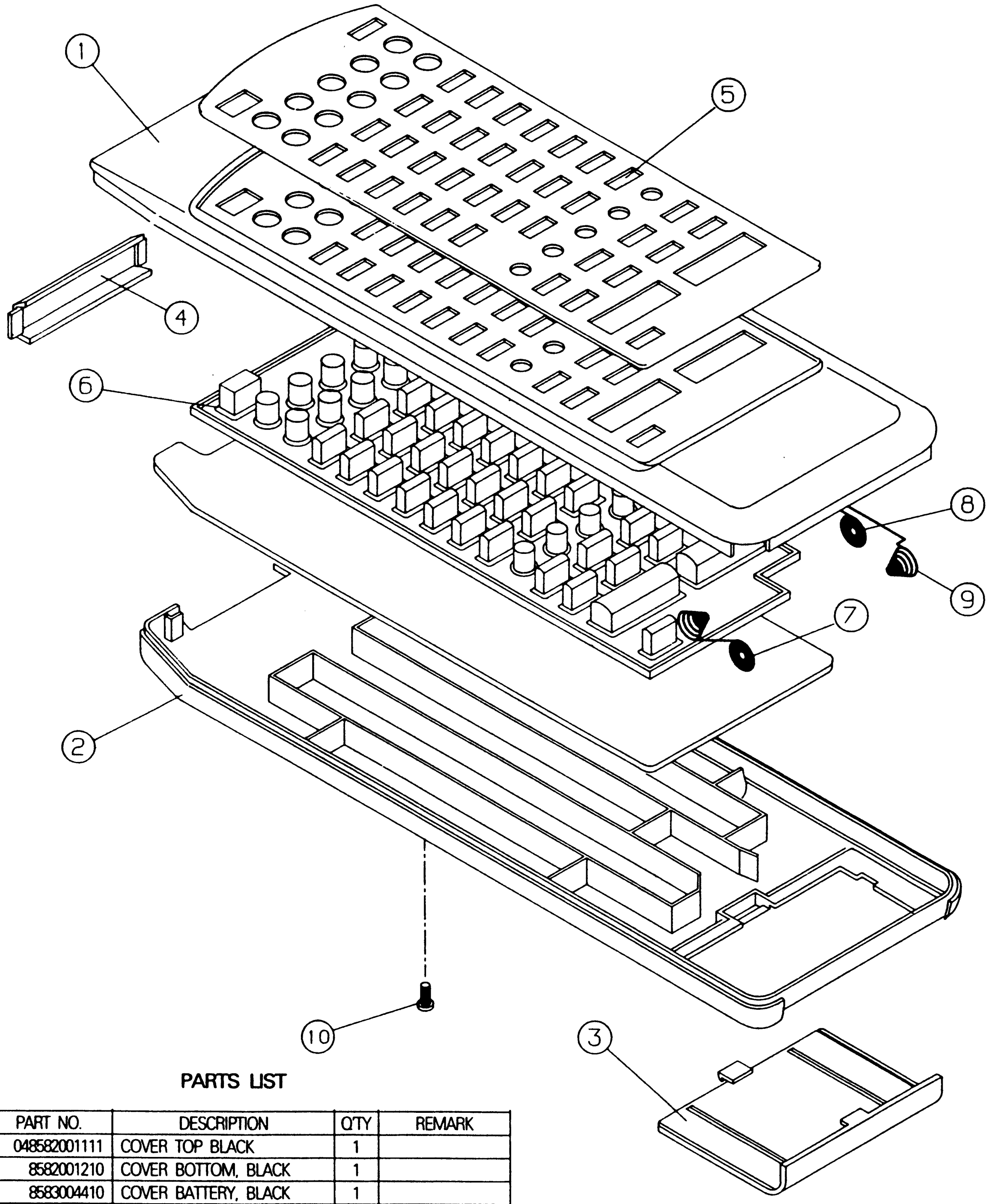
44
45
46
47
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11

Exploded View(Remocon Ass'y)



PARTS LIST

	PART NO.	DESCRIPTION	Q'TY	REMARK
1	048582001111	COVER TOP BLACK	1	
2	8582001210	COVER BOTTOM, BLACK	1	
3	8583004410	COVER BATTERY, BLACK	1	
4	8555040210	REMOCON WINDOW	1	
5	048552003291	INLAY COMMANDER, BLACK	1	DOM.
5	048552003281	INLAY COMMANDER, BLACK	1	Sherwood
6	048722000681	BUTTON RUBBER, GRAY	1	DOM.
6	048722000691	BUTTON RUBBER, GRAY	1	Sherwood
7	6555605310	SPRING BATTERY(+, −)	1	
8	6555009710	SPRING BATTERY(+)	1	
9	6555009810	SPRING BATTERY(−)	1	
10	8119620084	SCREW #2 PC2×8 ZNN	1	

Electrical Parts List

PRODUCT SAFETY NOTICE : Components marked with⚠ have special characteristics important to safety. If you replace any of these components, Carefully read the product safety notice of this manual. Don't degrade the safety of the product through improper servicing. Remark meaning for version, so refer to power requirement of Specifications in this manual. Resistors & Capacitors tolerance ; D : (±0.5%), J : (± 5%), K : (±10%), M : (±20%), Z : (+80%, -20%).

Main P.C.Board

Capacitors

Ref.No	Part No.	Description	Remark
C460/C461	3419582200	Electric SA 8200uF 80V M	
C501L/R	3579470130	Ceramic 47pF 50V J	
C502L/R	3579561130	Ceramic 560pF 50V J	
C502L/R	3579391130	Ceramic 390pF 50V J	D
C503L/R	3579331935	Ceramic 330pF 50V J	
C503L/R	3579471935	Ceramic 470pF 50V J	D
C504L/R	3479210061	Electric SA 10uF 35V M	
C505L/R	3579821935	Ceramic 820pF 50V J	
C505L/R	3579391935	Ceramic 390pF 50V J	D
C506/C507	3479247041	Electric SA 47uF 25V M	
C508	3479247871	Electric SA 0.47uF 50V M	
C510E	3579680130	Ceramic 68pF 50V J	
C510L/R	3479222971	Electric SA 2.2uF 50V M	
C511L/R	3579471130	Ceramic 470pF 50V J	
C512L/R	3479347071	Electric SA 47uF 50V M	
C512E	3579680130	Ceramic 68pF 50V J	
C513L/R	3579102130	Ceramic 1000pF 50V J	
C515L/R	3579270130	Ceramic 27pF 50V J	
C515L/R	3579470130	Ceramic 47pF 50V J	D
C516L/R	3579809030	Ceramic 8pF 50V J	
C516L/R	3579120030	Ceramic 12pF 50V J	D
C517L/R	3579150130	Ceramic 15pF 50V J	
C518L/R	3519471935	Ceramic 470pF 50V J	
C519L/R	3679472120	Mylar 0.047uF 100V J	
C520L/R	3519221935	Ceramic 220pF 50V J	
C521L/R	3519221935	Ceramic 220pF 50V J	
C522L/R	3679472120	Mylar 0.047uF 100V J	
C523L/R	3479222041	Electric SA 22uF 25V M	
C524L/R	3479222041	Electric SA 22uF 25V M	
C525L/R	3519330935	Ceramic 33pF 50V J	
C526L/R	3479210971	Electric SA 1uF 50V M	
C527L/R	3579309030	Ceramic 3pF 50V J	
C528L/R	3479247041	Electric SA 47uF 25V M	
C529L/R	3479247041	Electric SA 47uF 25V M	
C561L/R	3479310121	Electric SA 100uF 10V M	
C562	3479210071	Electric SA 10uF 50V M	
C563L/R	3679104120	Mylar 0.1uF 100V J	
C564L/R	3679104120	Mylar 0.1uF 100V J	
C583–C585	3509103450	Ceramic 0.01uF 150V J	
C586/C587	3509103450	Ceramic 0.01uF 150V J	D

Connectors

Ref.No	Part No.	Description	Remark
CNT504P	4428516610	Plug 7P	
CNT506P	4428516310	Plug 4P	
CNT507	436206143132	Ass'y 6P 140mm to Main	
CNT509P	4428516110	Plug 2P	
CNT519P	4428516210	Plug 3P	
CNT529P	4428516210	Plug 3P	
CNT539P	4428516210	Plug 3p	

Diodes

Ref.No	Part No.	Description	Remark
D501	2058306101	1N4148	
D510L/R	2258599115	UZ27BSC	
D511L/R –D517L/R	2058306101	1N4148	
D518L/R	2258100135	1N4002	
D519L/R	2258100135	1N4002	
D520L/R	2258100135	1N4148	
D521L/R	2058306101	1N4148	
D561/D562	2058306101	1N4148	
D563	2258599116	UZ12BSC	
D564	2058306101	1N4148	
D565	2258599104	UZ5.6BSB	
D566	2258100135	1N4002	
D567	2058306101	1N4148	
D568	2258100135	1N4002	
D569/D570	2058306101	1N4148	
D571	2258100135	1N4002	
D580–D583 ⚠	2058100138	1NPX6A03	

IC's

Ref.No	Part No.	Description	Remark
IC501	2168020106	NJM2068DD, Buffer	
IC502L/R	2168206104	KIA75559P, Servo Amp.	

Coils

Ref.No	Part No.	Description	Remark
L561L/R	2648001010	Inductor, 50uH	

Connectors

Ref.No	Part No.	Description	Remark
Plug 3P AC	4428525790	Plug 3P AC	
CNT514P	4428516310	Plug 4P	
CNT516P	4428516110	Plug 2P	

Other

Ref.No	Part No.	Description	Remark
Plate GND	4235007210	Plate Ground	

Resistors

Ref.No	Part No.	Description	Remark
R501	3069103970	10kΩ	
R501L/R	3069392970	3.9kΩ	
R501L/R	3069473970	47kΩ	D
R502L/R	3069332970	3.3kΩ	
R502L/R	3069302970	3kΩ	D
R502	3069332970	3.3kΩ	
R503	3069105970	1MΩ	
R503L/R	3069102970	1kΩ	
R504	3069105970	1MΩ	
R504L/R	3069104970	100kΩ	
R505L/R	3069102970	1kΩ	
R506/R507	3069471970	470Ω	
R508L/R	3069471970	270Ω	
R508L/R	3069471970	470Ω	
R509L/R	3069220970	22Ω	
R510L/R	3069220970	22Ω	
R511L/R	3069471970	470Ω	
R512L/R	3069563970	56kΩ	
R513L/R	3069470970	47Ω	
R514L/R	3069470970	47Ω	
R515L/R	3009102973	1kΩ	

Ref.No	Part No.	Description	Remark
R516L/R	3069332970	3.3kΩ	
R517L/R	3069332970	3.3kΩ	
R518L/R	3069331970	330Ω	
R519L/R	3069273970	27kΩ	
R520L/R ⚠	3029222572	M., 2.2kΩ 2W	
R521L/R	3069102970	1kΩ	
R522L/R	3069102970	1kΩ	
R523L/R	3069103970	10kΩ	
R524L/R	3069102970	1kΩ	
R525L/R ⚠	3029121472	M., 120Ω 1W	
R526L/R	3069272970	2.7kΩ	
R527L/R	3069202970	2kΩ	
R528L/R	3069123970	12kΩ	
R529L/R	3069183970	18kΩ	
R530L/R ⚠	3029121472	M., 120Ω 1W	
R531L/R	3069273970	27kΩ	
R532L/R	3069273970	27kΩ	
R533L/R	3069472970	4.7kΩ	
R534L/R	3069472970	4.7kΩ	
R535L/R	3069242970	2.4kΩ	
R536L/R	3069183970	18kΩ	
R537L/R	3069183970	18kΩ	
R538L/R	3069339970	3.3Ω	
R539L/R	3069339970	3.3Ω	
R540L/R	3029391472	M., 390 1W	
R541L/R –R544L/R	3069339970	3.3Ω	
R545L/R –R548L/R	3059398782	C., 0.39Ω 5W	
R549L/R	3069222970	2.2kΩ	
R550L/R ⚠	3069222970	2.2kΩ	
R551L/R	3069222970	2.2kΩ	
R552L/R	3069153970	15kΩ	
R553L/R	3069471970	470Ω	
R554L/R	3069471970	470Ω	
R561	3009103973	10kΩ	
R562	3069101970	100Ω	
R563L/R	3069223970	22kΩ	
R564L/R	3069222970	2.2kΩ	
R565	3069432970	4.3kΩ	
R566	3069432970	4.3kΩ	
R567	3069123970	12kΩ	
R570	3069562970	5.6kΩ	
R571	3069332970	3.3kΩ	
R572L/R ⚠	3029100572	M., 10Ω 2W	
R573	3069333970	33kΩ	
R574	3069333970	33kΩ	
R575	3069332970	3.3kΩ	
R576	3069332970	3.3kΩ	
R577	3069333970	33kΩ	

Relays

Ref.No	Part No.	Description	Remark
RLY501 ⚠	5518001450	Relay, JC2AD	
RLY502 ⚠	5518001450	Relay, JC2AD	
RLY503	5528001580	Relay, G2R-2A	

Transistors

Ref.No	Part No.	Description	Remark
Q501	2208206105	KTA1015Y PNP	
Q502L/R	2208606112	2SC1302S NPN	
Q510L/R	2018217700	2SK332F	
Q511L/R	2208606104	MPSA06 NPN	
Q512L/R	2208606108	KTC2240BL NPN	
Q513L/R	2208606108	KTC2240BL NPN	
Q514L/R	2208206102	KTA949Y PNP	
Q516L/R	2208606107	KTC2229 NPN	
Q517L/R	2028407118	2SC2168 NPN	
Q518L/R	2208206102	2SA958 PNP	
Q519L/R	2028416106	2SC3855 NPN	
Q520L/R	2028116103	2SA1491 PNP	
Q521L/R	2028416106	2SC3855 NPN	
Q522L/R	2028116103	2SA1491 PNP	
Q523L/R	2208606114	MPSA06 NPN	
Q561L/R	2208606114	MPSA06 NPN	
Q562L/R	2208606114	MPSA06 NPN	
Q563	2208606104	KTC1815Y NPN	
Q564–Q566	2208606114	MPSA06 NPN	

Input 2 P.C.Board

Capacitors

Ref.No	Part No.	Description	Remark
C201L/R	3519101935	Ceramic 100pF 50V J	D
C202L/R	3519101935	Ceramic 100pF 50V J	D
C203L/R	3519101935	Ceramic 100pF 50V J	
C204/C205	3479247041	Electric SA 47uF 25V M	
C211L/R	3519101935	Ceramic 100pF 50V J	D
C212L/R	3519101935	Ceramic 100pF 50V J	D
C213L/R	3519101935	Ceramic 100pF 50V J	
C214/C215	3479247041	Electric SA 47uF 25V M	
C221L/R	3519101935	Ceramic 100pF 50V J	D
C222L/R	3519101935	Ceramic 100pF 50V J	D
C223L/R	3519101935	Ceramic 100pF 50V J	
C224/C225	3479247041	Electric SA 47uF 25V M	
C231L/R	3519101935	Ceramic 100pF 50V J	D
C232L/R	3519101935	Ceramic 100pF 50V J	D
C233L/R	3519101935	Ceramic 100pF 50V J	
C234/C235	3479247041	Electric SA 47uF 25V M	
C241L/R	3519101935	Ceramic 100pF 50V J	D
C242L/R	3519101935	Ceramic 100pF 50V J	D
C243L/R	3519101935	Ceramic 100pF 50V J	
C244/C245	3479247041	Electric SA 47uF 25V M	
C251L/R	3519101935	Ceramic 100pF 50V J	
C252/C253	3479247041	Electric SA 47uF 25V M	
C261L/R	3519101935	Ceramic 100pF 50V J	
C262/C263	3479247041	Electric SA 47uF 25V M	
C271E	3479247971	Electric SA 4.7uF 50V M	
C271L/R	3479233871	Electric SA 0.33uF 50V M	
C272L/R	3679333120	Mylar 0.033uF 50V J	
C272E	3479247971	Electric SA 4.7uF 50V M	
C273L/R	3679333120	Mylar 0.033uF 50V J	
C274/C275	3479247041	Electric SA 47uF 25V M	
C292	2208606112	Electric SA 47uF 25V M	
C293	3479210971	Electric SA 1uF 50V M	
C294/C295	3479247041	Electric SA 47uF 25V M	

Ref.No	Part No.	Description	Remark
C296	3479210971	Electric SA 1uF 50V M	
C297	3479247041	Electric SA 47uF 25V M	
Connectors			
CNT201P	4428517410	Plug 15P	
CNT214P	4428516510	Plug 6P	
Diodes			
D291/D292	3479210971	1N4148	
IC's			
IC201-IC205	2168206104	KIA75559P, Buffer	
IC207	2168206104	KIA75559P, Buffer	
IC208	2168020106	NJM2068DD, Filter	
IC209/IC210	2168017132	LC7821, Switching	
Connector			
CNT204P	4428516610	Plug 7P	
Resistors			
R201L/R	3069102970	1kΩ	
R202L/R	3069224970	220kΩ	
R203L/R	3069470970	47Ω	
R204L/R	3069473970	47kΩ	
R205L/R	3069472970	4.7kΩ	
R206	3069471970	470Ω	
R207	3069471970	470Ω	
R211L/R	3069102970	1kΩ	
R212L/R	3069224970	220kΩ	
R213L/R	3069470970	47Ω	
R214L/R	3069473970	47kΩ	
R215L/R	3069472970	4.7kΩ	
R216	3069471970	470Ω	
R217	3069471970	470Ω	
R221L/R	3069102970	1kΩ	
R222L/R	3069224970	220kΩ	
R223L/R	3069470970	47Ω	
R224L/R	3069473970	47kΩ	
R225L/R	3069472970	4.7kΩ	
R226	3069471970	470Ω	
R227	3069471970	470Ω	
R228/R229	3069102970	1kΩ	
R231L/R	3069102970	1kΩ	
R232L/R	3069224970	220kΩ	
R233L/R	3069470970	47Ω	
R234L/R	3069473970	47kΩ	
R235L/R	3069472970	4.7kΩ	
R236/R237	3069471970	470Ω	
R241L/R	3069102970	1kΩ	
R242L/R	3069224970	220kΩ	
R243L/R	3069470970	47Ω	
R244L/R	3069473970	47kΩ	
R245L/R	3069472970	4.7kΩ	
R246	3069471970	470Ω	
R247	3069471970	470Ω	
R252L/R	3069332970	3.3kΩ	

Ref.No	Part No.	Description	Remark
R253	3069332970	3.3kΩ	
R253L/R	3069104970	100kΩ	
R254L/R	3069104970	100kΩ	
R254/R255	3069471970	470Ω	
R256	3069103970	10kΩ	
R261L/R	3069104970	100kΩ	D
R262L/R	3069332970	3.3kΩ	
R263L/R	3069104970	100kΩ	
R264	3069471970	470Ω	
R265	3069471970	470Ω	
R271E	3069472970	4.7kΩ	
R271L/R	3069822970	8.2kΩ	
R272L/R	3069243970	24kΩ	
R272EE	3069471970	470Ω	
R273L/R	3069684970	680kΩ	
R273EE	3069471970	470Ω	
R274E	3069331970	330Ω	
R275	3069470970	47Ω	
R275E	3069331970	330Ω	
R276E	3069331970	330Ω	
R291	3069104970	100kΩ	
R292-R294	3069471970	470Ω	
R295	3069104970	100kΩ	
R296	3069471970	470Ω	
R297	3069474970	470kΩ	
R298	3069225970	2.2MΩ	
R299	3069103970	10kΩ	
Relay			
RLY202	5528001020	Relay, RZ12	
Transistors			
Q251L/R	2208606112	KTD1302S NPN	
Q252	2208206105	KTA1015Y PNP	
Q261L/R	2208606112	KTD1302S NPN	
Q272	2208606104	KTC1815Y NPN	

Ref.No	Part No.	Description	Remark
Speaker Terminal P.C. Board			
Capacitors			
C565L/R -C567L/R	3679222120	Mylar 0.0022uF 100V J	D

Ref.No	Part No.	Description	Remark
Posistor P.C.Board			
Connector			
CNT905	436202243132	Ass'y 2P 240mm to Main	
Posistor	2438012200	Posistor, PTH487A	

Bias Transistor P.C.Board

Connectors

Ref.No	Part No.	Description	Remark
CNT915	436203160632	Ass'y 3P 160mm to Main	
CNT925	436203140632	Ass'y 3P 160mm to Main	

Transistors

Ref.No	Part No.	Description	Remark
QX1/QX2	2008609107	MPS9633	

MM/MC P.C.Board

Capacitors

Ref.No	Part No.	Description	Remark
C100	3679472120	Mylar 0.0047uF 100V J	
C101L/R	3579472130	Ceramic 4700pF 50V J	
C102L/R	3679472120	Mylar 0.0047uF 100V J	
C103L/R	3519331935	Cermic 330pF 50V J	
C104L/R	3479210121	Electric SA 100uF 10V M	
C105L/R	3479210121	Electric SA 100uF 10V M	
C106L/R	3519561935	Cermic 680pF 50V J	
C107L/R	3479222031	Electric SA 22uF 16V M	
C108L/R	3479222031	Electric SA 22uF 16V M	
C109L/R	3479222131	Electric SA 220uF 16V M	
C110L/R	3479222131	Electric SA 220uF 16V M	
C111L/R	3679102120	Mylar 0.001uF 100V J	
C113L/R	3479247971	Electric SA 4.7uF 50V M	
C114L/R	3519100935	Cermic 10pF 50V J	
C115L/R	3579222130	Ceramic 2200pF 50V J	
C116L/R	3479210121	Electric SA 100uF 10V M	
C117L/R	3679182120	Mylar 0.0018uF 100V J	
C118L/R	3679562120	Mylar 0.0056uF 100V J	
C119L/R	3479222041	Electric SA 22uF 25V M	
C120L/R	3679562120	Mylar 0.0056uF 100V J	
C121/C122	3479210131	Electric SA 100uF 16V M	
C130	3679472120	Mylar 0.0047uF 100V J	
C131L/R	3519220935	Cermi 22pF 50V J	
C132L/R	3519101935	Cermic 100pF 50V J	
C133L/R	3479247971	Electric SA 4.7uF 50V M	
C134L/R	3519100935	Cermic 10pF 50V J	
C135L/R	3579222130	Ceramic 2200pF 50V J	
C136L/R	3479210121	Electric SA 100uF 10V M	
C137L/R	3679182120	Mylar 0.0018uF 100V J	
C138L/R	3679562120	Mylar 0.0056uF 100V J	
C139L/R	3479682871	Electric SA 0.68uF 100V M	
C140L/R	3679562120	Mylar 0.0056uF 100V J	
C141	3479210131	Electric SA 100uF 16V M	
C142	3479210131	Electric SA 100uF 16V M	
C151L/R	3519101935	Cermic 100pF 50V J	
C152L/R	3519101935	Cermic 100pF 50V J	
C161L/R	3519101935	Cermic 100pF 50V J	
C162L/R	3519101935	Cermic 100pF 50V J	

Connector

Ref.No	Part No.	Description	Remark
CNT102	436115163132	Ass'y 15P 160mm to Input 2	

Coils

Ref.No	Part No.	Description	Remark
L101L/R	2648001010	Inductor, 50uH	D
L102L/R	2648001010	Inductor, 50uH	D

IC's

Ref.No	Part No.	Description	Remark
IC101	2168020106	NJM2068DD, Equalizer	
IC102	2168020106	NJM2068DD, Equalizer	

Resistors

Ref.No	Part No.	Description	Remark
R101L/R	3069122970	1.2kΩ	
R102L/R	3069680970	68Ω	
R103L/R	3069911970	910Ω	
R104L/R	3069103970	10kΩ	
R105L/R	3069473970	47kΩ	
R106L/R	3069473970	47kΩ	
R107L/R	3069100970	10Ω	
R108L/R	3069562970	5.6kΩ	
R109L/R	3069562970	5.6kΩ	
R110L/R	3069152970	1.5kΩ	
R111L/R	3069152970	1.5kΩ	
R112L/R	306947097u	47Ω	
R113L/R	3069104970	100kΩ	
R114L/R	3069913970	91kΩ	
R115L/R	3069911970	910Ω	
R116L/R	3069564970	560kΩ	
R117L/R	3069433970	43kΩ	
R118L/R	3069104970	100kΩ	
R119L/R	3069471970	470Ω	
R120/R121	3069152970	1.5kΩ	
R131L/R	3069102970	1kΩ	
R132L/R	3069913970	91kΩ	
R133L/R	3069913970	91kΩ	
R134L/R	3069911970	910Ω	
R135L/R	3069564970	560kΩ	
R136L/R	3069433970	43kΩ	
R137L/R	3069104970	100kΩ	
R138L/R	3069471970	470Ω	
R139	3069152970	1.5kΩ	
R140	3069152970	1.5kΩ	
R151L/R	3069272970	2.7kΩ	
R161L/R	3069272970	2.7kΩ	
R162	3069471970	470Ω	
R201E	3069103970	10kΩ	
R202E	3069103970	10kΩ	

Relay

Ref.No	Part No.	Description	Remark
RLY101	5528001020	Relay, RZ12	

Transistors

Ref.No	Part No.	Description	Remark
Q101L/R	2008607114	2SC3329 NPN	
Q102L/R	2008207107	2SA1316 PNP	
Q103	2208606104	KTC1815Y NPN	

CPU P.C.Board

Capacitors

Ref.No	Part No.	Description	Remark
C401L/R	3479222971	Electric SA 2.2uF 50V M	
C401	3479210061	Electric SA 10uF 35V M	
C402L/R	3579470130	Ceramic 47pF 50V J	

Ref.No	Part No.	Description	Remark
C402	3479210971	Electric SA 1uF 50V M	
C403L/R	3479222971	Electric SA 2.2uF 50V M	
C403	3479210871	Electric SA 0.1uF 50V M	
C404	3579220130	Ceramic 22pF 50V J	
C404L/R	3479222971	Electric SA 2.2uF 50V M	
C405	3579220130	Ceramic 22pF 50V J	
C405L/R	3479310141	Electric SA 100uF 16V M	
C406	3579821130	Ceramic 820pF 50V J	
C406L/R	3479310141	Electric SA 100uF 16V M	
C407	3479222041	Electric SA 22uF 25V M	
C408	3549472407	Electric 0.047F 5.5V M	
C408L/R	3679153120	Mylar 0.015uF 100V J	
C409L/R	3679823120	Mylar 0.082uF 100V J	
C410L/R	3479222971	Electric SA 2.2uF 50V M	
C411L/R	3679332120	Mylar 0.0033uF 100V J	
C412L/R	3679183120	Mylar 0.018uF 100V J	
C413L/R	3479210041	Electric SA 10uF 25V M	
C414L/R	3579470130	Ceramic 47pF 50V J	
C415L/R	3479247041	Electric SA 47uF 25V M	
C416L/R	3679563120	Mylar 0.056uF 100V J	
C417L/R	3679473120	Mylar 0.047uF 100V J	
C418L/R	3479210971	Electric SA 1uF 50V M	
C419L/R	3479247031	Electric SA 47uF 16V M	
C431	3479247971	Electric SA 4.7uF 50V M	
C432	3479247971	Electric SA 4.7uF 50V M	
C433	3479310141	Electric SA 100uF 25V M	
C434	3479310141	Electric SA 100uF 25V M	
CX2	3579103530	Ceramic 0.001uF 50V J	

Connectors

Ref.No	Part No.	Description	Remark
CNT402	436207403032	Ass'y 7P 140mm to IN 2	
CNT405P	4428516610	Plug 7P	
CNT406	436206163132	Ass'y 6P 160mm to Volume	
CNT407P	4428516210	Plug 3P	
CNT408	436209283132	Ass'y 9P 280mm to Switch	
CNT412	436206203132	Ass'y 6P 200mm to IN 2	
CNT415	436204263132	Ass'y 4P 260mm to Main	
CNT416	436206163132	Ass'y 6P 160mm to Volume	
CNT426	436202163132	Ass'y 2P 160mm to Volume	

Diodes

Ref.No	Part No.	Description	Remark
D402–D404	2058306101	1N4148	
D405–D421	2371124501	R34YCD70	
D422	2058306101	1N4148	
D423/D424	2371124501	R34YCD70	

IC's

Ref.No	Part No.	Description	Remark
IC401	2148322136	CXP50P48, CPU	
IC402	2408000131	KRM34LI, Infrared Sensor	
U1	216880[illegible]100	IC, GL393, Comparator	

Resistors

Ref.No	Part No.	Description	Remark
R10	3069102970	1kΩ	
R12	3069334970	330kΩ	

Ref.No	Part No.	Description	Remark
R16/R18	3069102970	1kΩ	
R20/R22	3069102970	1kΩ	
R24/R26	3069102970	1kΩ	
R28/R30	3069102970	1kΩ	
R32/R34	3069102970	1kΩ	
R35/R36	3069103970	10kΩ	
R37/R39	3069102970	1kΩ	
R41/R43	3069102970	1kΩ	
R45	3069102970	1kΩ	
R47	3069103970	10kΩ	
R48	3069103970	10kΩ	
R49	3069103970	10kΩ	
R51	3069223970	22kΩ	
R55/R56	3069103970	10kΩ	
R57	3069102970	1kΩ	
R68–R71	3069334970	330kΩ	
R74	3069103970	10kΩ	
R75	3069471970	470	
R76	3069103970	10kΩ	
R80/R82	3069102970	1kΩ	
R84	3069102970	1kΩ	
R401E	3069105970	1MΩ	
R401L/R	3069104970	100kΩ	
R401	3069472970	4.7kΩ	
R402	3069103970	10kΩ	
R402L/R	3069104970	100kΩ	
R403L/R	3069221970	220Ω	
R403	3069103970	10kΩ	
R404L/R	3069562970	5.6kΩ	
R405L/R	3069562970	5.6kΩ	
R406L/R	3069104970	100kΩ	
R407L/R	3069471970	470Ω	
R408L/R	3069471970	470Ω	
R409L/R	3069223970	22kΩ	
R410L/R	3069683970	68kΩ	
R411L/R	3069392970	3.9kΩ	
R412L/R	3069222970	2.2kΩ	
R413L/R	3069105970	1MΩ	
R414L/R	3069823970	82kΩ	
R415L/R	3069821970	820Ω	
R416L/R	3069474970	470kΩ	
R417L/R	3069154970	150kΩ	
R418L/R	3069332970	3.3kΩ	
R419L/R	3069182970	1.8kΩ	
R420L/R	3069392970	3.9kΩ	
R421L/R	3069223970	22kΩ	
R422L/R	3069242970	2.4kΩ	
R423L/R	3069102970	1kΩ	
R424L/R	3069392970	3.9kΩ	
R425L/R	3069471970	470Ω	

Ref.No	Part No.	Description	Remark
R427L/R	3069272970	2.7kΩ	
R428–R430	3069471970	470Ω	
R434	3069473970	47kΩ	
R435	3069105970	1MΩ	
R436	3069330970	33Ω	
R437	3069472970	4.7kΩ	
R438	3069223970	22kΩ	
R439	3069330970	33Ω	
R440	3069472970	4.7kΩ	
R441	3069473970	47kΩ	
R442	3069102970	1kΩ	
RX1–RX3	3069472970	4.7kΩ	
RX4–RX6	3069103970	10kΩ	
RX7–RX9	3069472970	4.7kΩ	
RX10	3069104970	100kΩ	
RX11	3069103970	10kΩ	
Other			
X5	3938101830	Resonator, CSA4.00	
Relays			
RLY401	5528001020	Relay, RZ12	
RLY402	5528001020	Relay, RZ12	
Transistors			
Q3	2208206105	KTA1015Y PNP	
Q6	2018207106	2SK117Y NFET	
Q9	2208606104	KTC1815Y NPN	
Q401	2208622106	KTC114Y NPN	
Q401L/R	2008207107	2SA1316 PNP	
Q402L/R	2008607114	2SC3329 NPN	
Q403	2208606104	KTC1815Y NPN	
Q405–Q423	2208622106	KTC114Y NPN	

Ref.No	Part No.	Description	Remark
Power Supply P.C.Board			
Capacitors			
C701	3409347169	Electric SG 470uF 35V M	
C701E	3479210121	Electric SA 100uF 10V M	
C702	3409347169	Electric SG 470uF 35V M	
C702E	3479210971	Electric SA 1uF 50V M	
C703	3409347169	Electric SG 470uF 35V M	
C704–C706	3479210971	Electric SA 1uF 50V M	
C707–C710	3679472120	Mylar 0.0047uF 100V J	
C711	3479210971	Electric SA 1uF 50V M	
C712	3479222131	Electric SA 220uF 16V M	
C713	3549472530D	Ceramic 0.0047uF 400V J	
Connectors			
CNTAC3P	4428525790	Plug 3P AC	
CNT704P	4428516210	Plug 3P	
CNT705P	4428516510	Plug 6P	

Ref.No	Part No.	Description	Remark
CNT709P	4428505710	Plug 3P	
Diodes			
D701	2258106100	1N4002	
D701E	2258599100	Zener, UZ3.3BSB	
D702E	2058306101	1N4148	
D702/D703	2258106100	1N4002	
D705–D711	2258106100	1N4002	
Fuses			
F701/R702	5508302035	T 1A/250V	C,D,F
F701/R702	5508202021	NB1A/125V	A
F701/R702	5508202030	NB1A/250V	B,Dom.
F703	5508301434	T 315mA/250V	C,D,F
F703	5508201321	NB300mA/125V	A
F703	5508201330	NB300mA/250V	Dom.,B
F704	5508302935	T 4A/250V	C,D,F
F704	5508203421	NB8A/125V	A
F704	5508203430	NB8A/250V	B,Dom.
F705	5508202930	NB4A/250V	B,Dom.
F706	5508302535	T 2.5A/250V	D
IC's			
IC701	2168600106	GD7918, Regulator	
IC702	2168601106	GD7818, Regulator	
IC703	2168601105	GD7815, Regulator	
IC704	2168601110	GD7806, Regulator	
PINNUTR	4228001410	Malcopin	
PINLIVE	4228001410	Malcopin	
•	4235007210	Plate Ground	
•	4428525780	Plug AC 2P	
•	4428525790	Plug AC 3P	
Transistor			
Q701	2208606114	MPSA06 NPN	
Resistors			
R701E	3069339970	3.3Ω	
R701/R702⚠	3029100472	M., 10Ω 1W	
R703/R704	3029339472	M., 3.3Ω 1W	
R705 ⚠	3029332472	M., 3.3kΩ 1W	
R706/R707	3069339970	3.3Ω	
RLY701⚠	5528001570	Relay Omron 12V 10A	
STBYTRAN	2828072601	HY (KS)	Dom.

Ref.No	Part No.	Description	Remark
Speaker Switch P.C.Board			
Connector			
CNT804P	4428525590	Plug 9P, Angle	
Diodes			
D801	2371124701	LED SLR34URC70, Red	
D802	2371124501	LED R34YCD70, Yellow	
D803	2371124501	LED R34YCD70, Yellow	

Ref.No	Part No.	Description	Remark
Resistors			
R801	3069391970	390Ω	
R802/R803	3069331970	330Ω	
Transistors			
Q801-Q803	2208622106	DTC114Y	

Ref.No	Part No.	Description	Remark
Volume P.C.Board (Domestic)			
Capacitors			
C601 - C603	3479210131	Electric SA 100uF 16V M	
Connectors			
CNT604P	4428525560	Plug 6P, Angle	
CNT605	436204148332	Ass'y 4P 140mm to Main	
CNT609P	4428525520	Plug 2P, Angle	
CNT614P	4428525560	Plug 6P, Angle	
CNT615	436202163132	Ass'y 2P 160mm to Main	
CNT624P	4428525520	Plug 2P	
IC			
IC601	2168007204	TA7291S, Motor Control	
Resistors			
R601	3069330970	33Ω	
R602	3069512970	5.1kΩ	
R603	3069822970	8.2kΩ	
R604	3069102970	1kΩ	
Transistor			
Q601	2208606114	MPSA06 NPN	

Ref.No	Part No.	Description	Remark
Volume LED P.C Board			
Connector			
CNT906	436202222142	Ass'y 2P 220mm to Volume	
Diode			
D901	2371124701	SRR34URC70F	

Ref.No	Part No.	Description	Remark
Volume P.C.Board (D)			
Capacitors			
C851 - C853	3479210131	Electric SA 100uF 16V M	
CE8	3479210131	Electric SA 100uF 16V M	

Ref.No	Part No.	Description	Remark
Connectors			
CNT604PA	4428525560	Plug 6P, Angle	
CNT605PA	436204148332	Ass'y 4P 140mm to Main	
CNT609PA	4428525520	Plug 2P, Angle	
CNT614PA	4428525560	Plug 6P, Angle	
CNT615PA	436202163132	Ass'v 2P 160mm to Main	
CNT624PA	4428525520	Plug 2P	
IC			
IC651	2168007204	TA7291S, Motor Driver	
Resistors			
R851	3069330970	33Ω	
R852	3069512970	5.1kΩ	
R853	3069822970	8.2kΩ	
R854	3069102970	1kΩ	
Transistor			
Q851	2208606114	MPSA06 NPN	

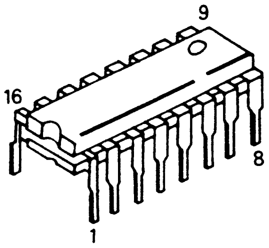
Ref.No	Part No.	Description	Remark
Headphone P.C Board			
Connectors			
CNT935P	4428516310	Plug 3P	
CNT935	436203453132	Ass'y 3P 450mm to Main	
Capacitors			
C901	3519561935	Cermic 560pF 50V J	Axial
C902	3519561935	Cermic 560pF 50V J	Axial
C903	3679103120	Mylar 0.01uF 100V J	
Resistors			
R903	3029561572	M., 560Ω 2W	
R904	3029561572	M., 560Ω 2W	

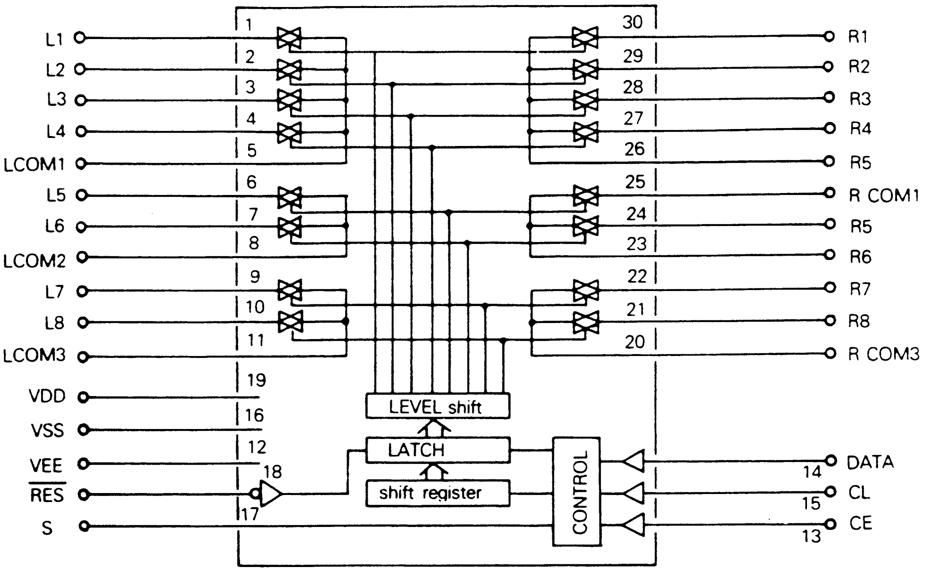
Mechanical Parts List

No.	Description	Part No.	Q'ty	Remark
1	Panel Front, Black	048602018411	1	
(1)	Panel Front, Black	048602018421	1	DOM.
2	Badge	048535033911	1	Sherwood
(2)	Badge	048535034011	1	DOM.
3	Knob Rotary, Black	048643001811	3	
4	Knob Rotary, Black	048942000211	1	
5	Guide LED	8555031410	10	
(5)	Guide LED	8555031410	11	DOM.
6	Window Sensor	048555038511	1	
7	Body Front, Black	8521008110	1	
8	Button Tact 'E'	8543043110	1	
9	Jack Phone, Gold	4438005020	1	
10	Shield Phone	6165136410	1	
11	Chassis Front	6120013410	1	
12	Frame Left	6121607710	1	
13	Cover Top, Black	046122021211	1	
14	Volume 100KA2	3208059910	2	
15	Volume 250KMN	3208060010	1	
16	Volume Motor	3228016710	1	
(16)	Volume Motor	3228016910	1	DOM.
17	Switch Push	4628056910	1	
18	Switch Tact	4658003710	20	
(18)	Switch Tact	4658003710	22	DOM.
19	Bezel Ring, Gold	048525007711	1	DOM.
20	Button Tact 'F', Black	8543043210	1	DOM.
21	Button Tact 'A', Black	048542003411	1	DOM.
(21)	Button Tact 'B', Black	048542003511	1	
22	Button Tact 'D', Black	8543043010	1	
23	Button Tact 'C', Black	8543042910	1	
24	Regulator TR Heatsink	7505206110	1	
25	AC Out let	4448103610	1	C,D
(25)	AC Out let	4448104210	1	A,B
26	AC Out let	4448103910	2	DOM.
(26)	Voltage Selector	4618006510	1	B, DOM.
27	Voltage Selector	4618006610	1	B, DOM.
28	Chassis Back, Black	046102033111	1	DOM.
(28)	Chassis Back, Black	046102033121	1	A
(28)	Chassis Back, Black	046102033131	1	B
(28)	Chassis Back, Black	046102033141	1	C
(28)	Chassis Back, Black	046102033151	1	D
(28)	Chassis Back, Black	046102033161	1	E
(28)	Chassis Back, Black	046102033171	1	F
29	Bushing	7015003120	2	
30	Terminal Speaker	4408105810	1	A,B DOM.
(30)	Terminal Speaker	4408107210	1	C,D,E,F
31	Jack Remote	4438105010	1	
32	Bracket Heatsink	6505103910	1	
33	Heatsink Power	7502004330	1	
34	Jack RCA, 4P	4438103110	1	
35	Jack RCA, 2P	4438107410	2	
36	Foot	046033101611	2	
36	Foot	046033101711	2	DOM.
37	Foot, Gold Hotstamping	046033101611	2	C,D,E,F
37	Foot, AL Gold Ring	046033101711	2	DOM.
37	Foot, Black	046033101611	2	A
38	Cover Bottom	6122415720	1	
39	Frame Right	6122901620	1	
40	RCA Jack, 4P	4438109110	1	
41	RCA Jack, 4P	4438103110	1	
42	RCA Jack, 6P	4438103210	1	
43	Stopper Cord, Black	6518000710	1	A,B
43	Stopper Cord, Black	6518000111	1	C,D,F
43	Stopper Cord, Black	6513000210	1	E
43	Stopper Cord, Black	6513000310	1	DOM.
44	Cord AC Power, Black	4308001410	1	A,B
44	Cord AC Power, Black	4308002310	1	C,D,F
44	Cord AC Power, Black	4308002410	1	DOM.
44	Cord AC Power, Black	4308000610	1	E
45	System Ground	4408104910	1	
46	Plug Jumper, Black	4328204210	2	
47	Adapter, Black	4428300310	1	DOM.
48	Locking Tie	6528002810	1	
49	Indicator	8555038610	11	
Screws				
S1	#2WPTC 3×8 ZNY	8159230081	13	
S2	#2BTC 3×8 ZNB	8109230083	41	
S3	#1PTC 3×10 ZNB	8119130103	15	
S4	WSAM 4×8 ZNB	8159440083	8	
S5	#FTC 3×8 ZNB	8129230083	2	
S6	#2WPTC 3×8 ZNB	8159230083	8	
S7	HEX MSW 3×12 ZNY	8499130121	8	
S8	#2WPTC 3×14 ZNY	8159230141	2	
S9	#2PTC 4×6 ZNY	8119240061	1	
S10	Ground ZNB	8155000710	4	
S11	#2BTC 2.6×8 ZNB	8109226083	4	

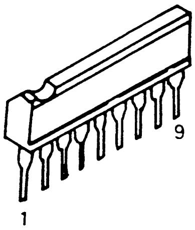
Semiconductor Lead Identification & Internal Diagram

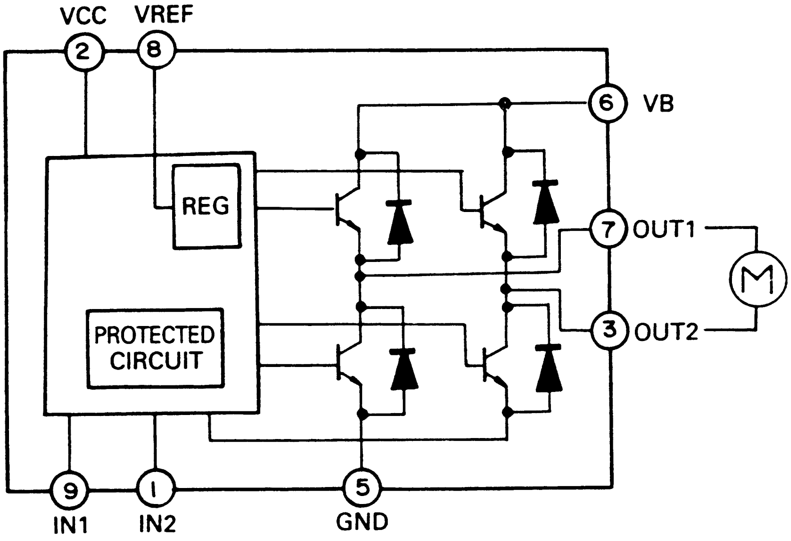
LC7821 : IC209/IC210



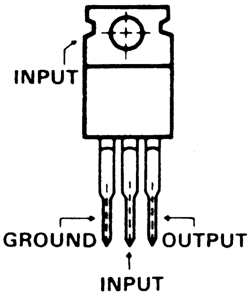

L1
L2
L3
L4
LCOM1
L5
L6
LCOM2
L7
L8
LCOM3
VDD
VSS
VEE
RES
S
1
2
3
4
5
6
7
8
9
10
11
19
16
12
18
17
30
29
28
27
26
25
24
23
22
21
20
R1
R2
R3
R4
R5
R COM1
R5
R6
R7
R8
R COM3
LEVEL shift
LATCH
shift register
CONTROL
14
15
13
DATA
CL
CE

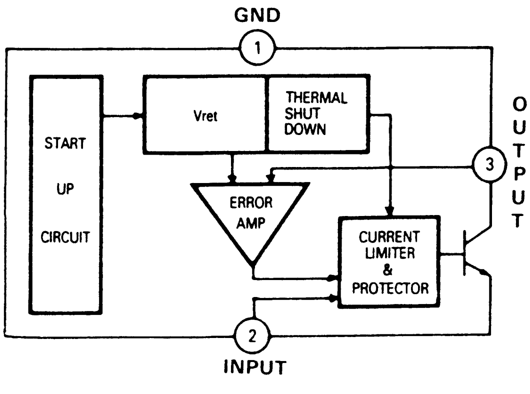
TA7291S : IC601



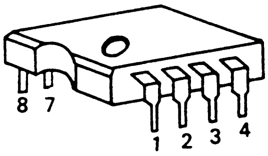

VCC
VREF
2
8
6
VB
REG
7
OUT1
M
PROTECTED CIRCUIT
3
OUT2
9
1
5
IN1
IN2
GND

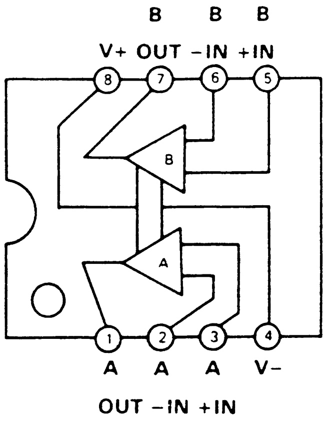
GD7918 : IC701


INPUT
GROUND
OUTPUT
INPUT

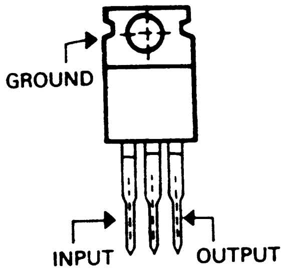

GND
1
START UP CIRCUIT
Vret
THERMAL SHUT DOWN
ERROR AMP
CURRENT LIMITER & PROTECTOR
3
OUTPUT
2
INPUT

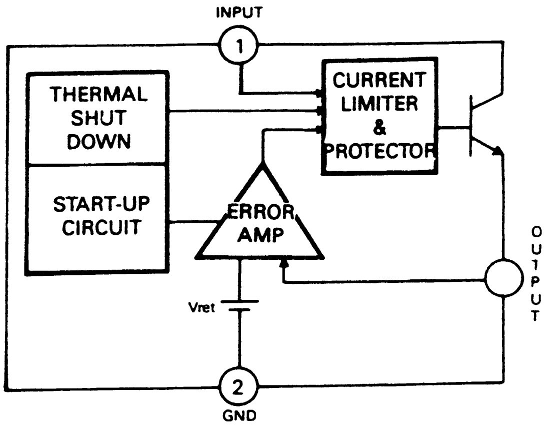
KIA75559P : IC502L/R,IC201–IC205
IC207



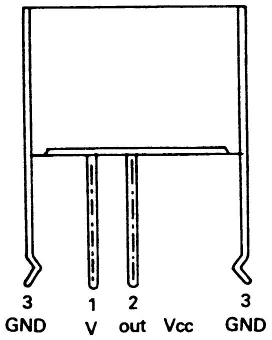

B B B
V+ OUT −IN +IN
8 7 6 5
B
A
1 2 3 4
A A A V−
OUT −IN +IN

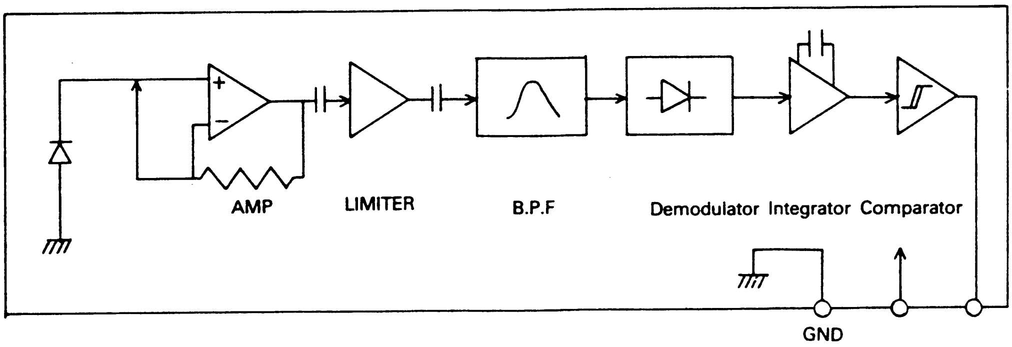
GD7815 : IC703
GD7806 : IC704
GD7818 : IC702


GROUND
INPUT
OUTPUT


INPUT
1
THERMAL SHUT DOWN
START-UP CIRCUIT
CURRENT LIMITER & PROTECTOR
ERROR AMP
Vref
OUTPUT
2
GND

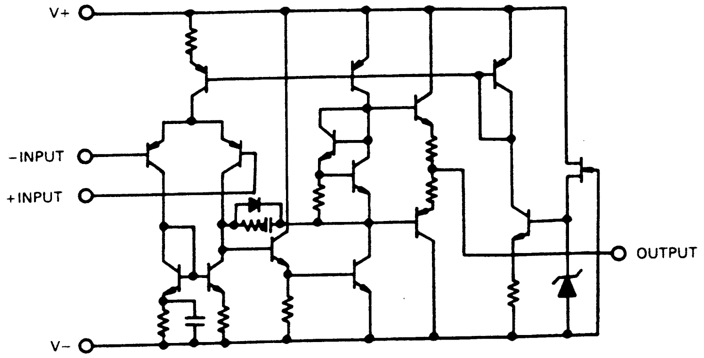
KRM34L1 : IC402


3
GND
1
V
2
out
Vcc
3
GND

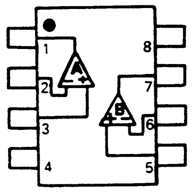

+
−
AMP
LIMITER
B.P.F
Demodulator
Integrator
Comparator
GND

NJM2068DD : IC501,IC208,IC101/IC102

Equivalent Circuit


V+
-INPUT
+INPUT
V-
OUTPUT

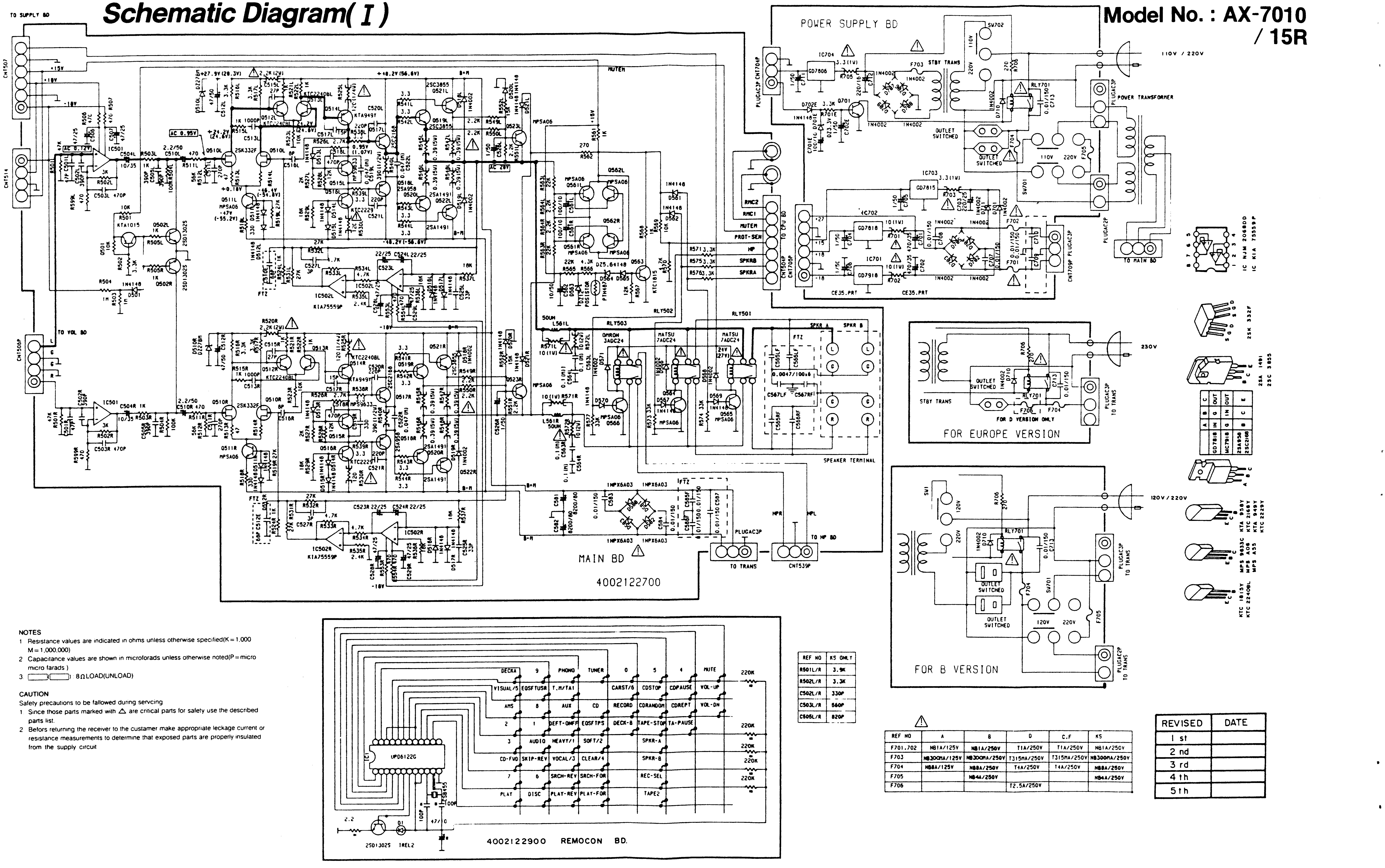
(TOP VIEW)


1
2
3
4
5
6
7
8
A
B

1. A OUTPUT
2. A −INPUT
3. A +INPUT
4. V−
5. B+ INPUT
6. B− INPUT
7. B OUTPUT
8. V+

Schematic Diagram(I)

Model No. : AX-7010 / 15R


TO SUPPLY BD
CN507
CN514
TO VOL BD
CN506P
MAIN BD
4002122700
POWER SUPPLY BD
POWER TRANSFORMER
110V / 220V
STBY TRANS
OUTLET SWITCHED
TO CPU BD
TO MAIN BD
RLY501
RLY502
RLY503
SPKR A
SPKR B
SPEAKER TERMINAL
TO TRANS
TO HP BD
CN539P
230V
FOR EUROPE VERSION
FOR D VERSION ONLY
120V/220V
FOR B VERSION
PLUGAC2P
TO TRANS
4002122900 REMOCON BD.
UPD6122G
DECKA
9
PHONO
TUNER
0
5
4
MUTE
VISUAL/5
EQSFTUSR
T.M/TA1
CARST/6
CDSTOP
CDPAUSE
VOL-UP
AMS
8
AUX
CD
RECORD
CDRANDOM
CDREPT
VOL-DN
2
1
DEFT-ONFF
EQSFTPS
DECK-B
TAPE-STOP
TA-PAUSE
3
AUDIO
HEAVY/1
SOFT/2
SPKR-A
CD-FWD
SKIP-REV
VOCAL/3
CLEAR/4
SPKR-B
7
6
SRCH-REV
SRCH-FOR
REC-SEL
PLAT
DISC
PLAY-REV
PLAY-FOR
TAPE2
2SD1302S
1REL2
IC NJM 2068DD
IC KIA 7555P
2SK 332F
2SA 1491
2SC 3855
KTC 1815Y
KTC 2240BL
MPS A06
KTA 949Y
KTC 2229Y

NOTES
1 Resistance values are indicated in ohms unless otherwise specified(K = 1,000 M = 1,000,000)
2 Capacitance values are shown in microforads unless otherwise noted(P = micro micro farads)
3. ▭(▭) : 8Ω LOAD(UNLOAD)

CAUTION
Safety precautions to be fallowed during servcing
1 Since those parts marked with △ are critical parts for safety use the described parts list.
2 Befors returning the receiver to the custamer make appropriate leckage current or resistance measurements to determine that exposed parts are properly insulated from the supply circuit

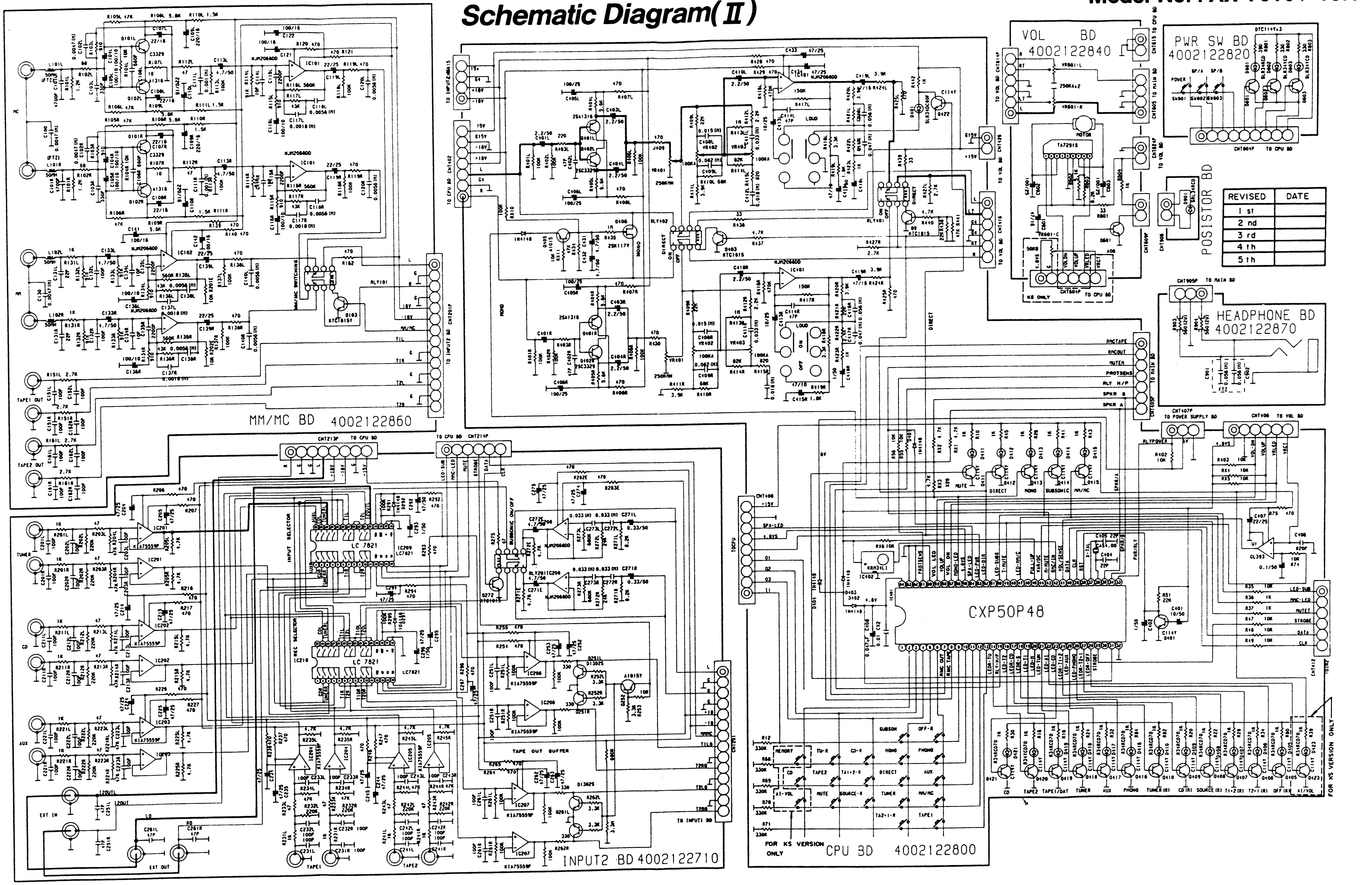
REF NO	KS ONLY
R501L/R	3.9K
R502L/R	3.3K
C502L/R	330P
C503L/R	560P
C506L/R	820P

△

REF NO	A	B	D	C,F	KS
F701.702	NB1A/125V	NB1A/250V	T1A/250V	T1A/250V	NB1A/250V
F703	NB300MA/125V	NB300MA/250V	T315MA/250V	T315MA/250V	NB300MA/250V
F704	NB8A/125V	NB8A/250V	T4A/250V	T4A/250V	NB8A/250V
F705		NB4A/250V			NB4A/250V
F706			T2.5A/250V		

REVISED	DATE
1 st	
2 nd	
3 rd	
4 th	
5 th	

Schematic Diagram(II)


MM/MC BD 4002122860
INPUT2 BD 4002122710
CPU BD 4002122800
VOL BD 4002122840
PWR SW BD 4002122820
HEADPHONE BD 4002122870
POSISTOR BD
CXP50P48
LC 7821
INPUT SELECTOR
REC SELECTOR
TAPE OUT BUFFER
MOTOR
TA7291S
TUNER
CD
AUX
MM
MC
TAPE1 OUT
TAPE2 OUT
EXT IN
EXT OUT
TAPE1
TAPE2
FOR KS VERSION ONLY

REVISED	DATE
1 st	
2 nd	
3 rd	
4 th	
5 th	